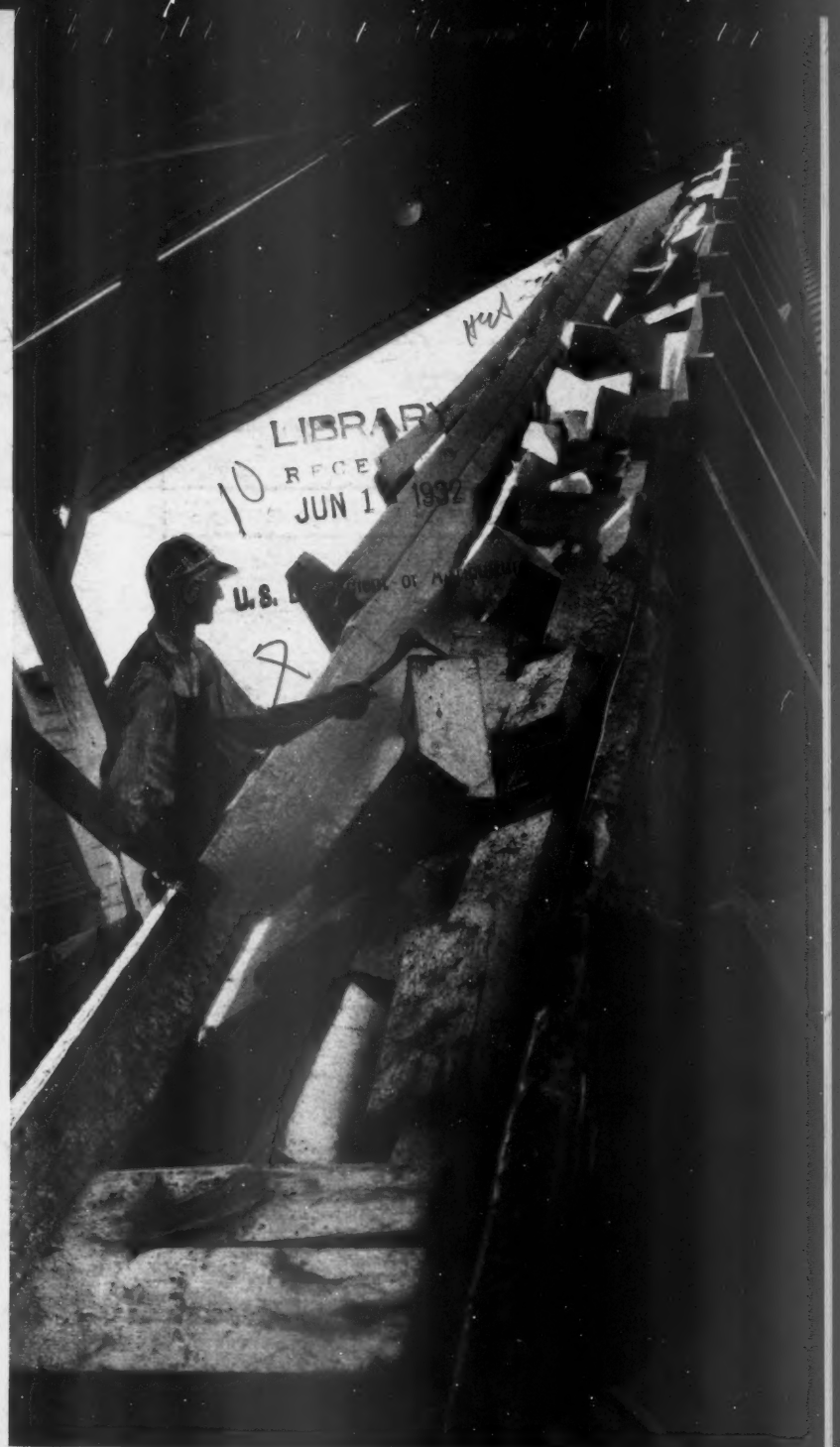
PACIFIC PULP & PAPER INDUSTRY

MAY
1932


LIBRARY
RECE
JUN 1 1932
U.S.

An abundant and inexpensive wood supply is one important asset of the Pacific Coast pulp and paper industry.

VOLUME 6
NUMBER 6
THIS COPY
35 CENTS

WILLIAMS STANDARD PAPER MOISTURE TESTER

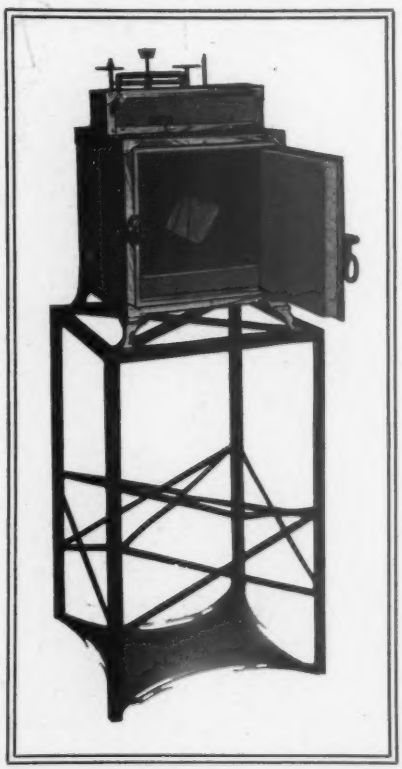
An Accurate Moisture Test of Your Paper in Ten Minutes

One Paper Company Has Bought 21 for Their Various Mills

Moisture tests can be made in your Machine Room by your Machine Tenders.

No calculations required. Accurate to .1 of 1%.

Tests all kinds of paper from tissue to board.



Hot samples weighed without removal from oven. No chance for moisture absorption during weighing.

Double-walled electric drying oven, with thermostat control.

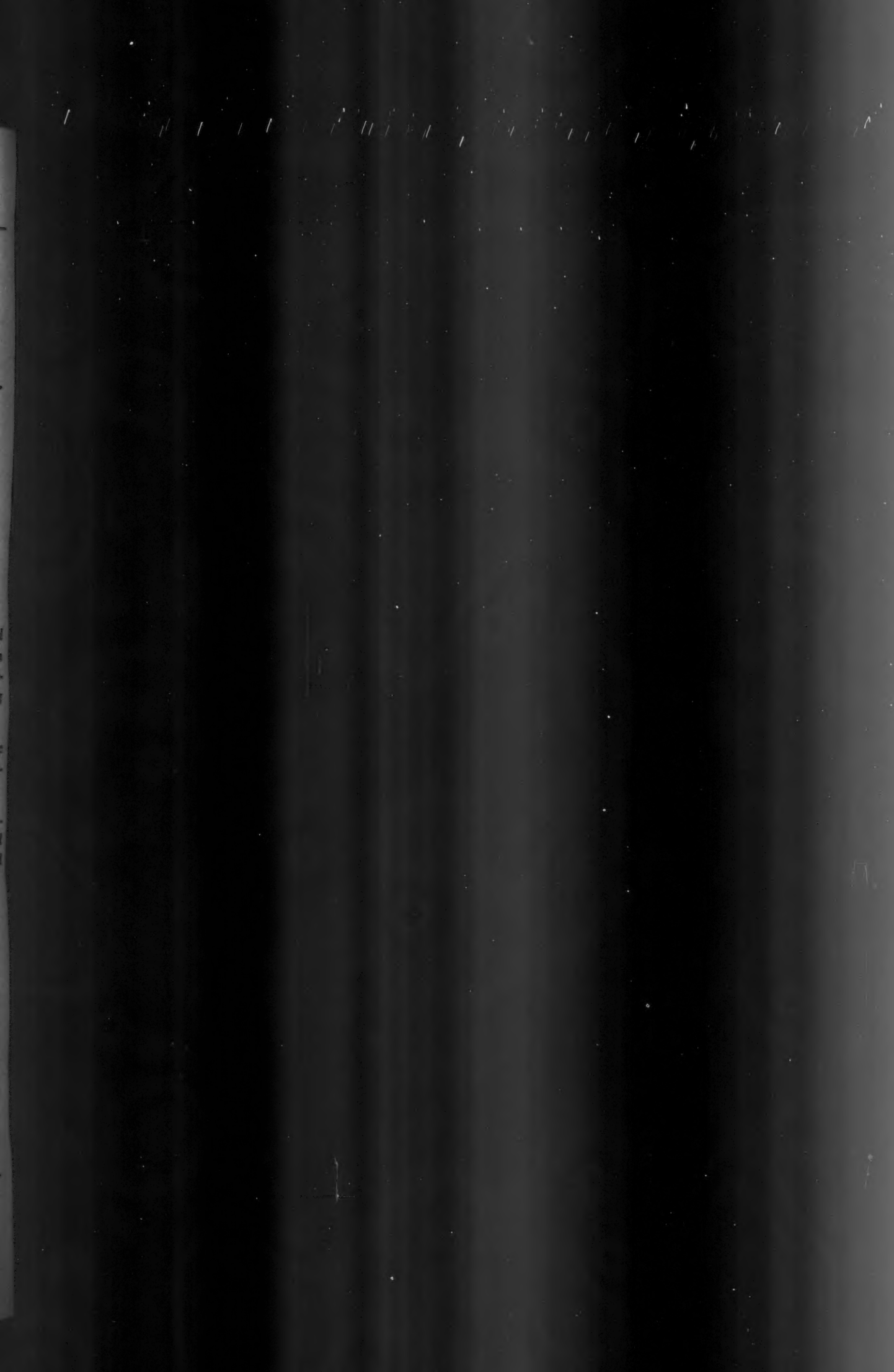
Accurate scales with non-rusting agate bearings and beam graduated to read percent moisture directly.

Over-dried Paper Costs You More Dollars Per Ton and Dissatisfied Customers

WILLIAMS APPARATUS COMPANY

WATERTOWN, N. Y.

Pacific Pulp & Paper Industry is published once a month—except in March, when publication is semi-monthly—at 71 Columbia St., Seattle, Wash. Subscription: U. S. and Canada, $4.00; other countries, $5.00. Entered as second class matter May 20, 1927, at the Postoffice at Seattle, under the Act of March 3, 1879.



REBUILD your old Machine NOW

You can arrange shake at various points along wire opposite where sheet is forming to suit conditions.

6 NEW WAYS TO SHAKE YOUR FOURDRINIER

The *Beloit Way* is the *Modern Way*

The BELOIT

HIGH-SPEED SHAKE

1. Shake at center—taper towards breast roll and couch roll.
2. Control intensity and length of stroke while running.
3. Tapered shake from breast roll towards couch.
4. Tapered shake from couch to breast roll.
5. Breast roll may be shaken or remain stationary, as required.
6. Parallel shake from breast roll to couch.

Imagine what these new features will mean to you in increased speed, production and all-around efficiency. You can have this improved Beloit High-Speed Super-Shake installed on your old machine, thus modernizing your old equipment and bringing it up to date.

Write for particulars now

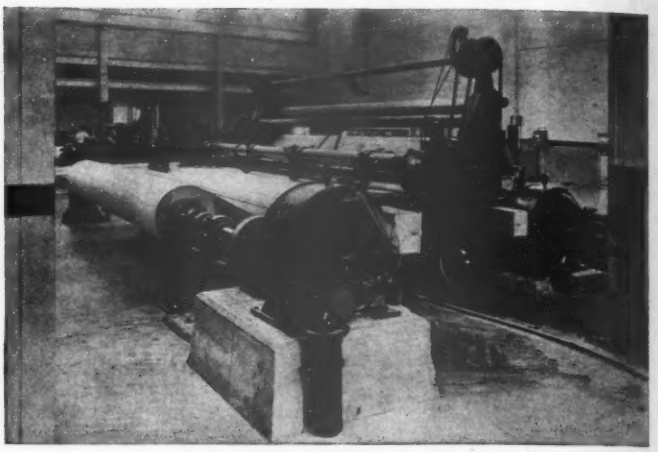
BELOIT IRON WORKS - - - - - - BELOIT, WISCONSIN, U. S. A.

—a NEW Winder Drive

that

SAVES

Wasted Power



Westinghouse Motors on a 228-in., 2-drum, 3000-ft. winder, showing the small space requirements of this drive. Braking Generator is in foreground.

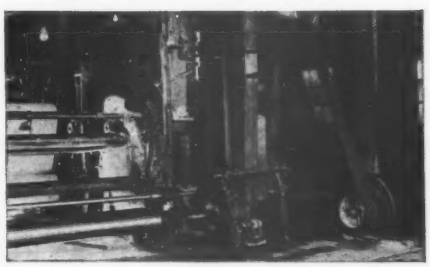
OUT of every dollar you now spend on power for old-fashioned winder drives, more than half frequently goes to heat up brake bands and drums on the unwinding stands. This wasted power can be saved and power costs reduced, with the new Westinghouse Winder Drive.

This new winder drive has an electric braking generator that returns energy, formerly wasted, to the winder motor. Furthermore, it provides automatic control of sheet tension, assures fewer paper breaks and results in a better and more uniformly wound roll.

Power requirements are not only greatly reduced but expensive wear and tear on brakes is entirely eliminated.

FOR NEW AND OLD WINDERS

The new Westinghouse winder drive, with individual motors on each drive shaft and a braking generator on the unwinding stand, is adaptable to both new and existing two and four-drum winders. Complete control of tension and speed is centralized at one point. Ask the nearest Westinghouse Sales office for further information.

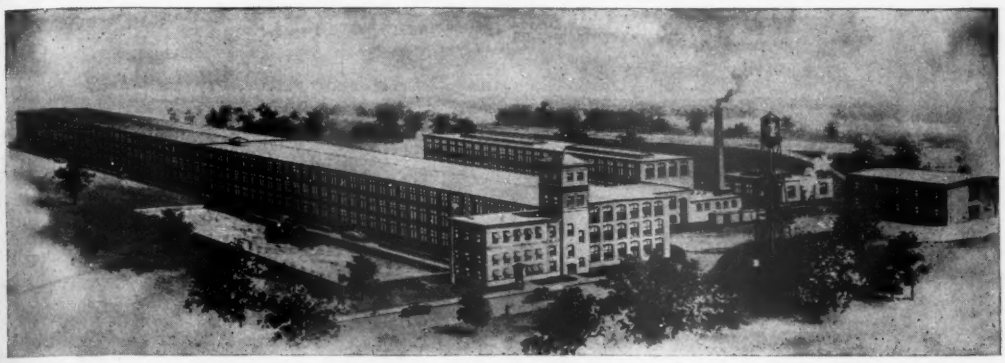


In 1911, this winder with Westinghouse Motor Drive was modern and up-to-the-minute. It was one step in the evolution of the highly efficient Westinghouse electric Winder Drive of 1932.

Quality workmanship guarantees every Westinghouse product

Westinghouse

T 79064



THE HOME OF ALBANY FELTS

Results Command Attention

GOOD BOARD is not made by accident. It is the result of attention to details. One important detail is the felt.

Without the proper Top and Bottom Felts the board gets away to a bad start, and is handicapped all the way through to the finished product.

A fast-running board machine of today cannot operate successfully with "any-old-felt." It needs Tops and Bottoms designed to meet its individual requirements. Special wools to give added strength, special weaves to permit ample water removal without interfering with finish. Everything must be *carefully balanced.*

The results modern and progressive board mills are securing from Albany Felts deserve your attention.

ALBANY FELT COMPANY ALBANY NEW YORK

When writing ALBANY FELT CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

ARE YOUR CUSTOMERS DEMANDING

BETTER FINISH

?

If you are confronted with this problem we can help you.

Three years ago Kenwood offered a new line of Plate Press felts which has been accepted by the trade throughout the country.

The sale of these felts has increased steadily from month to month even during the past year when most paper mills have curtailed production extensively. This means that Kenwood Plate Press felts are enabling the paper manufacturer to produce a sheet that is meeting the exacting demands of the trade for better finish.

In these times of keen quality competition your finish must be the best that it is possible to obtain. Kenwood Plate Press felts will solve this problem for you.

The demand for better finish has led board makers as well as the manufacturers of fine paper to turn to Kenwood for these felts which are so outstanding in their ability to produce fine finish without sacrifice of life or water removal.

Ask our representative to tell you about the Kenwood Plate Press felts.

KENWOOD WOOL PRODUCTS

KENWOOD *tanned* FELTS

F. C. HUYCK & SONS

KENWOOD MILLS, ALBANY, N. Y.

KENWOOD MILLS LTD., ARNPRIOR, ONTARIO, CANADA

When writing F. C. HUYCK & SONS CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

Published by the Consolidated Publishing Co., in Seattle, U.S.A., on the 15th of each month—semi-monthly in March.

PACIFIC PULP and PAPER INDUSTRY

SUBSCRIPTION RATES
United States and Canada....$4.00
Other Countries $5.00
Single Copies .....$ .35

VOLUME VI MAY, 1932 NUMBER 6

MILLER FREEMAN, President
L. K. SMITH, Manager
LLOYD E. THORPE, Editor
HARLAN SCOTT, Advertising Manager

THE PACIFIC COAST JOURNAL FOR PRODUCERS, CONVERTERS, AND DISTRIBUTORS OF PULP, PAPER, AND BOARD.

SEATTLE 71 Columbia Street
PORTLAND 446 Morrison St.
SAN FRANCISCO 369 Pine Street
LOS ANGELES 124 West 4th St.

INDEX OF ADVERTISERS

Albany Felt Co. 3
Beloit Iron Works 1
Brubaker Aerial Surveys 45
California Cotton Mills 44
Cameron Machine Co. 43
Carthage Machine Co. 46
Congress Hotel 36
De Guere, L. A. 48
Downingtown Mfg. Co. 34
Draper Bros. Co. 39
Du Pont, E. I. De Nemours & Co. 32
Eastwood Corp., The 41
Edison Storage Battery Co. 45
Elwell-Parker Electric Co. 43
Ferguson & Co., Hardy S. 48
Freeport Sulphur Co. 42
General Dyestuff Corp. 41
General Electric Co. 6
Glens Falls Machine Works 46
Griffith Rubber Mills 46
Hardy, Geo. F. 48
Hardy, Wm. A. & Sons Co. 45
Hodges, Walter S. 44
Huyck & Sons Co., F. C. 4
International Wire Works 46
Internationaler Holzmarkt 47
Jones & Sons Co., E. D. 38
Kuppler's Sons, Chris 48
Lindsay Wire Weaving Co. 46
Lockport Felt Co. 40
Merrick Scale Mfg. Co. 42
Mine & Smelter Supply Co 44
Montieum de la Papeterie Belge 47
Newhall, Charles 48
Orr Felt & Blanket Co. 36
Pacific Coast Supply Co. 43
Paper Converting Machine Co. 42
Paper Makers Chemical Co. 43
Papier Fabrikant 47
Papier Zeitung 47
Puget Sound Power & Light Co. 46
Pulp Bleaching Corp. Inside Back Cover
Ross Engineering Corp., J. O. 30
Schoenwerk, O. C. 48
Selden, Stanley J. 48
Shibley Co., Inc. 46
Shuler & Benninghofen 38
Simons, V. D. 48
S. K. F. Industries 41
Stebbins Engineering & Mfg. Co. 43
Svensk Travaru Tidning 47
Texas Gulf Sulphur Co. 40
Turner Halsey Co. 39
Union Oil Co. Outside Back Cover
Union Screen Plate Co. 44
Waldron Corp., John 46
Waterbury & Sons Co., H. 42
Westinghouse Elec. & Mfg. Co. 2
Williams Apparatus Co. Inside Front Cover
Zellstoff & Papier 47

Complete Your Picture!

What do you know about the vast Western industries which manufacture products, other than pulp and paper, from our forest raw materials?

Complete your picture now. Tear out this advertisement and mail it to us with your name and address. You will receive a sample copy of the only Western woodworking journal, together with a subscription offer.

Western Wood Worker & Furniture Manufacturer
71 Columbia St., Seattle, Wash.

THE BACKGROUND OF PULP AND PAPER

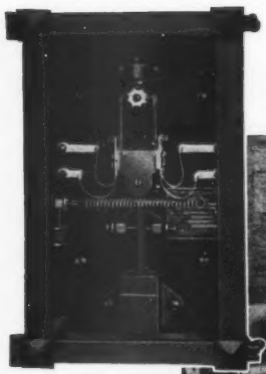
Every pulp and paper mill man who looks beyond the chipper and pulpwood pile, finds a most important field of vision. Forests, lumber, these form the background of pulp and paper.

Keeping apace of developments in the lumbering field, as directly affecting your business, is well worth while. This can best be done by reading the leading lumber journal, West Coast Lumberman, each month. Subscription, $3.50 per year, including the Annual Review. Foreign, $4.00.

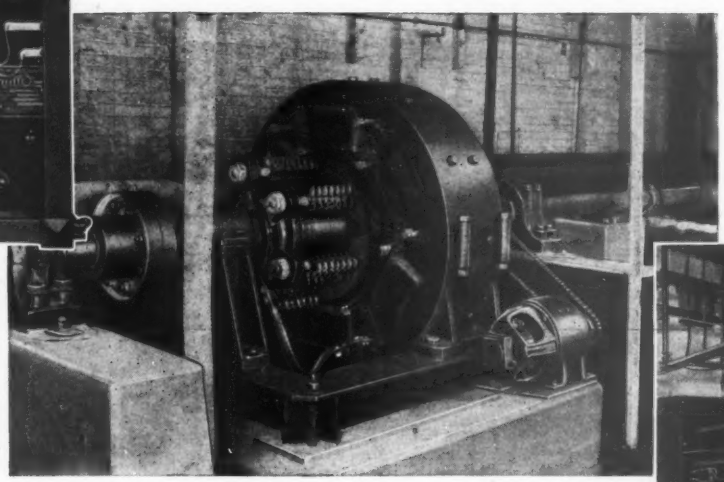
WEST COAST LUMBERMAN
71 Columbia St. Seattle, Wash.

MODERNIZE *the back-line-shaft drive of your paper machine*

with the G-E SINGLE-MOTOR, SPEED-REGULATING SYSTEM



G-E Type FD speed regulator



G-E 250-hp. motor and pilot generator, connected to back-line of paper machine

G-E control panel for single-motor, speed-regulating system

THIS unique system has been designed to combine simplicity with accuracy and dependability. Consider what it offers you:

Accurate, positive speed regulation through the use of the Type FD regulator and a specially designed pilot generator — a combination of simple devices.

Coarse or fine speed adjustment in equal percentage increments provided by a vernier rheostat operating in conjunction with the FD regulator.

Control equipment that provides manually operated speed adjustment from the machine room with automatic acceleration to a preset speed.

The elimination of varying speed as a factor in weight control.

General Electric can supply this system for operation on either a-c. or d-c. power. Your nearest G-E office has complete information and will be glad to furnish details.

Have you considered using the new G-E Thrustor for replacing levers, pedals, air and hydraulic cylinders, solenoids, etc.? Ask your nearest G-E office for a copy of Bulletin GEA-1262B.

230-4

GENERAL ELECTRIC

ANSWERING THE OPPOSITION

ARGUMENTS presented by interests opposed to the principle of equitable protection for the pulp and paper industry have in so many cases been misleading or entirely fallacious that answering arguments are prompted.

Claim—More mills are opposed to than in favor of protection.

Answer—In point of number of establishments this may be entirely true, but the truth is disguised in failing to mention that many of the mills comprising this total are very small institutions from the standpoint of tonnage and number of employes. Further, any comparison of mass tonnage must be discounted because many of the organizations most strongly opposing protection operate mills for the manufacture of paperboard and other similar cheap, heavy duty, grades, into which enters as a raw material a great deal of waste paper, rags and other base stocks other than wood pulp. If any comparison is made in terms of the number of employes on the payrolls of each group, the pulp mill should be credited with the very substantial volume of work it provides in cutting and preparing and transporting pulpwood. Such labor is not ordinarily shown in mill statistics, but is highly important from the total employment standpoint.

Claim—There are less than 20 independent pulp mills whose principal business is the production of pulp for sale to more than 500 converting mills.

Answer—The statement is incomplete and is intended to create a wrong impression of numbers and importance. The facts are that protection is not sought only for those who produce pulp for sale as a manufacture—or, rather, semi-manufacture—but for the entire group of mills which manufacture pulp, whether or not they sell it in the form of pulp or carry manufacture further in their own mills and sell it as paper. It is a case of protecting the entire wood pulp industry (domestic) against the entire volume of pulp imports. In 1930 the United States produced in domestic mills 4,630,308 tons of pulp. In the same year there were imported into the United States 1,832,877 tons of pulp of all kinds. These are the ratios to be compared.

Claim—Domestic pulp mills are unable to furnish the converting mill with pulp in ample quantity or satisfactory quality.

Answer—As to quantity, the deficiency is in no sense due to an inadequate domestic pulpwood supply. Any defiiciency claimed has developed entirely within the period of twenty years past that wood pulp has been on the free list as is due solely to the inability of the domestic pulp manufacturer to compete in an unprotected market with the cheaper labor and living standards of foreign nations. As further testimony of this point may be shown the pulp mills in Eastern states which have closed down during this era of duty-free pulp. Many of the Eastern mills which formerly produced their own pulp have had to turn in self protection to the purchase of foreign pulp. As a specific point in case, and one applicable to the Pacific Coast, there is the St. Regis Kraft Company's mill at Tacoma, Washington. This mill, only three years old, and thoroughly modern, has been idle for more than one year because it has been unable to compete with Scandinavian pulp which has sold, delivered Atlantic ports, for $30 per ton and less for the past eighteen months or more. This mill has an annual capacity of 50,000 tons.

As for pulp quality, the only admissable evidence should be that from unbiased sources such as the Bureau of Standards or the Forest Products Laboratory at Madison, Wisconsin. It should be sufficient to state that papers made from domestic pulp, and papers made from imported pulp sell in the same competitive market with no emphasis placed on the source or origin of the pulp. When the opposition contends that if it were forced to rely upon domestic pulps for supply it would be unable to compete on the quality factor it entirely forgets that if all papers were made from domestic pulp the competitive basis on quality would be equitable for all. In other words, the opposition contends on the one hand that domestic pulps are inferior, but admits on the other hand that domestic pulps have equality or even superiority.

Claim—A tariff on pulp would tend to increase the cost to the converter and would not result in any appreciable switching from foreign to domestic pulps.

Answer—Tariff is designed to afford to the domestic pulp producer that protection equal to the differences in cost which arise in the difference in wage scales, that is to say, the standards of living, existing between the United States and other countries. By placing the domestic pulp producer on a competitive basis by providing some protection there can be little question that domestic tonnage would be developed gradually to absorb the imports and bring about the desirable state of increased employment in the pulp mills, in wood cutting operations, and in equipping and servicing the increased tonnage.

Claim—Elimination of the converter mill would tend to concentrate the paper industry in fewer hands and subsequently increase the cost of the product to the consumer.

Answer—The tendency has been for paper manufacturing to concentrate near the centers of population inasmuch as it is more necessary for him to render the service of quick deliveries than is the case of the pulp manufacturer. On the other hand, it is necessary for the pulp mill to be close to the forest. Population centers in the belt between New York and Chicago, whereas the major pulpwood stands are to be found in the more sparsely settled areas. The geographic advantage in distribution which the converting mills now hold would no doubt be retained without respect to the source of the pulp.

Claim—By drawing wood pulp from foreign lands we conserve our forests.

Answer—Any reference to forest "conservation" on this basis, which contemplates timber as an irreplacable resource such as coal or oil, is fallacious. True conservation is based on intelligent utilization. If the nation is to be criticised for inadequate attention to forestry matters, that is principally reforestation, it is because the forest industries have had no protection and have therefore presented a hazardous investment. Data from a neutral source such as the U. S. Forest Service will support the contention that the United States has adequate pulpwood supplies to meet its entire requirements in perpetuity.

Claim—It would raise the price of news print.

Answer—The price of news print is of small concern to the publisher. The cost is ultimately passed on to the advertiser. News print costs vary today in different parts of the country according to transportation demands. A news paper is essentially a community proposition, drawing the greater part of its revenue from the community. It is little affected by any inter-community differences in costs. It has competition in its own community with other news papers, it is on an equal footing with respect to news print prices. In the war years news print sold for four times its present cost, indicating that news print costs are not as vital as presented.

Claim—It would put many converting mills out of business and thereby seriously add to unemployment.

Answer—A reasonable protection such as has been proposed would only equalize competitive conditions for the domestic wood pulp manufacturers and serve to turn some of the pulp purchases of converting mills from foreign to domestic sources. No change in the total consumption of paper products would occur. Therefore, present total employment, rather than being diminished, would provide a very desirable new employment resulting from the increased activity in domestic pulp mills.

These claims by the opposition are all general, but it is noted that some specific attacks have been directed at the Pacific Coast, due perhaps to the activity of this region in pressing the case for protection. Such attacks are no doubt intended to becloud the issue and make it appear a regional move rather than the national problem that it really is.

Finally, all the opposition arguments entirely avoid the meat of issue which is that a valuable domestic industry, a major source of employment, is being sacrificed to foreign nations because unprotected. The opposition avoids the major point that to produce the bulk of our paper requirements from materials entirely domestic would provide the nucleus for many jobs which this nation has such urgent demand for at this time.

T·A·P·P·I

Pacific Section sponsors fine program at Portland

HERE it is, a yarn of the best meeting yet of the Pacific Section of TAPPI, a yarn for those who weren't fortunate enough to be there at the Hotel Multnomah in Portland on Friday and Saturday, May 6th and 7th, and a yarn by way of review for those who were there.

From every standpoint the meeting marked a mighty step forward for the Pacific Section. The whole thing went off like clockwork. The papers were well selected, the attendance was excellent, the entertainment was varied, the spirit of good fellowship was better than ever and—a good time was had by all. Two days of education, of relaxation from the old grind, two days of dividends in life for those who attended.

Section Chairman Ralph Hansen of the Pacific Section gets a lot of credit. He handled the gavel like a veteran and kept things moving. Ray Smythe, general chairman in charge of the convention, deserves a lot of credit for a very thorough organization of events. The boys who attended showed their appreciation by presenting him with a leather bag at the close of the two-day session along with a rousing cheer.

One outstanding feature at Portland was the careful attention to detail which makes a show run smoothly. Programs were printed on the new cover paper now manufactured by the Hawley Pulp & Paper Company and everybody knew just what the order of the day was. The run-off kept exceptionally well to the scheduled time. At the time of registration the delegates were provided with tickets for each of the luncheons and banquets and detailed instructions about the golf tournament. And the ladies, there were many of them present and a working committee of wives to see to their entertainment.

The two-day session got under way officially on Friday morning with a stirring address of welcome by B. F. Irvine, editor of the Oregon Journal, a leading Portland daily which showed a sincere interest in the organization.

Ben T. Larrabee, superintendent of the new sulphite pulp mill of the Weyerhaeuser Timber Company, and member of the national Executive Committee of TAPPI, followed Mr. Irvine with a brief address on "Convention Etiquette and the Goal of TAPPI" in which he stressed that the individual forget about personal promotion and work for the promotion of the industry as a whole. He suggested that in the periods between conventions members set down questions on which they would like answers and then make it a point at the meetings to contact the men who are particular authorities in the respective fields covered by the questions.

When R. S. Wertheimer, resident manager of the Longview Fibre Company, and former chairman of the Pacific Section, followed Mr. Larrabee on the program he stirred up a flood of questions which finally had to be stopped by Chairman Hansen in order to permit the program to proceed. Mr. Wertheimer's official topic was "Kraft Mill Problems," but he asked leave to present instead a subject of much broader scope, one having to do with unemployment. With the aid of the blackboard he propounded a formula demonstrating that unemployment was increasing in geometric ratio to the development of technical science.

Pointing out the rate of development in the past, and bearing in mind the predicted rate of scientific achievement in the next generation, Mr. Wertheimer said, "I want to make the all important point that **unemployment is bound to increase at substantially the same rate with which science develops."**

"There is a science of human engineering that now enters the picture which is equally as important as mechanical or chemical engineering—and it is to this branch of science that I wish to draw your attention and set you thinking." Pointing out that the technical men were really responsible for increased idleness, Mr. Wertheimer charged that they "are the only men who can liquidate this unemployment situation."

It was clear from the ensuing lively discussion that most men are thinking about this very serious question, but it was also clear that such thinking was in need of concentration upon more definite objectives. Mr. Wertheimer's final retort was, "I haven't an answer. I only wished to raise this subject before you in a manner that was perhaps a little different, and to generate some very serious thought."

In the absence of E. A. Weber of the Oregon Pulp & Paper, there was substituted a brief address by Kenneth Shibley of the Shibley Company, on schools for

RALPH HANSEN
Chairman
Pacific Coast Section of TAPPI
handled the gavel
like a veteran.

water filter plant operators. He explained that this resolved itself into practical demonstrations once or twice a year, attended chiefly by waterworks engineers, but, with the increasing use of filtered water in pulp and paper mills the advantage of these schools was being extended to the industry under discussion. The schools provide " a chance to get together under competent operators."

R. J. Schadt, technical superintendent of the Hawley Pulp & Paper Company, presented an interesting paper on "The Importance of Technical Control in the Groundwood Plant." The paper raised a number of questions. Myron Black, of the Inland Empire Paper Company remarked that "we are still in the dark ages on this subject." Leo Friedman of the University of Oregon suggested the method of sampling as an important point to watch and drew a laugh in quoting one observed practice of an operator taking a large batch of a particularly fine lot of pulp and feeding it in hourly samples to the laboratory.

Extractor rolls, a comparatively recent innovation in removing water from the sheet, particularly on heavy papers and board, were discussed as the concluding Friday morning paper by J. J. Farrell of the Downingtown Manufacturing Company.

The Friday luncheon was attended by about 75 men and provided a relaxation into other fields of thought. The feature speaker was Dr. George Kim Lee, an American-educated Chinese possessed of an unusual grasp of his subject, the "Sino-Japanese Controversy." One point made by Dr. Lee of particular interest to the pulp and paper industry, was that Japan's aggression in Manchuria would permit the Oriental empire to control vast timber limits in Asia and thereby become a serious world competitor in the manufacture of pulp and paper.

On Friday afternoon the program split to accommodate those who do and those who do not play golf. While one group under the direction of E. G. Drew and U. A. Keppinger visited the Griffith Rubber Mills to see how rubber covered rolls are turned out, others went out to the beautiful Lake Oswego Country Club to compete for a handsome array of prizes that had been gathered from far and near by the earnest solicitation of Ken Hall. The weather was perfect.

The evening banquet was exceptionally well attended. It was an informal affair, well patronized by the ladies. Quincy Scott, cartoonist on the Morning Oregonian, presented a chalk talk, and Felix Pagenstecher, recently elected president of the Hawley Pulp & Paper Company, gave his impressions of the West. The mills in the Pacific region he found to be exceptionally modern, he said. The West appealed to him, Mr. Pagenstecher said, as a place "where you can take a deep breath without robbing your neighbor of air."

The Friday evening banquet concluded with the presentation of golf prizes. And the fortunate ones were as follows:

Carl Fahlstrom, Longview Fibre Company, low gross, leather golf bag from Honeyman Hardware Co.

Leo S. Burdon, International Wood & Sulphite Co., low net, Beckley-Ralston Chipper from the Link-Belt Company.

Fred Shaneman, Tacoma Electrochemical Co., greatest number holes up on par, 1 dozen balls presented by Paper Makers Chemical Co.

I. H. Andrews, Powell River Co., second greatest number of holes up on par, 1 dozen balls from Electric Steel Foundry Company.

Kenneth B. Hall, nearest full handicap, ½ dozen balls from Paper Makers Chemical Co.

T. L. Dunbar, Chemipulp Corp., handicap player with highest gross score, ½ dozen hand tied fishing flies from J. E. Haseltine & Co.

Don Shirley, Link-Belt Co., player nearest cup on the 15th hole after Tee shot, set of Crescent Socket Wrenches from Woodbury & Co.

Ralph B. Hansen, Weyerhaeuser, longest drive on the 17th hole, McGregor Driver donated by U. S. Electrical Mfg. Co. (U. S. Motors)

R. V. Maier, General Electric Co., most holes in par or under, bronze desk set, donated by Oregon Brass Works.

Myron Black, Inland Empire Paper Co., new player with lowest gross score, inner tube presented by Munnell & Sherrill.

Two golf balls were presented to each player who made a birdie. Balls were furnished by Marshall-Wells Company and were won by L. S. Burdon, 13th hole; Ed. Norton, 11th hole; B. W. Sawyer, 15th hole; J. E. Hassler, 6th hole.

On Saturday morning the technical discussions were resumed in the ball room with about 85 present. This attendance was substantially increased at the afternoon session by some late arrivals.

Dr. Kenneth Kobe of the University of Washington provided an interesting subject in his discussion on the "Concentration of Waste Sulphite Liquor by Submerged Combustion." He pointed out that liquor disposal had presented a problem in some cases and that study should be carried out to a successful solution. The principle of the method presented consisted of a relatively small inverted, open-bottom chamber into which the fuel and air were fed at high velocity at predetermined quantities, the whole being submerged in the liquid to be concentrated. The gases of combustion escaped by bubbling up through the liquor, thus providing a direct transfer of heat.

The method practically eliminates corrosion. Dr. Kobe explained that the system has been highly successful in some applications in industry, notably for concentrating phosphoric acid. The paper aroused questions on the practical application of the method. Dr. Kobe conceded that the experiments were incomplete, but that as far as carried out there were indications that with a liquor containing 10% solids enough fuel value would be reclaimed to permit concentration of waste sulphite liquor by this process to be carried out on a self-sustaining basis.

Thomas Parks, chief engineer for the Hawley Pulp & Paper Company, discussed some studies made on the causes and effects of blister failures on boiler tubes and exhibited samples.

Recent "Process Improvements and Controls in Sulphite Cooking Practice" were reviewed by Norman Kelly, assistant superintendent, Weyerhaeuser Timber Company, Pulp Division. The paper is presented in its complete form in other pages of this issue.

May 9, 1932

Mr. L. E. Thorpe, Editor
Pacific Pulp & Paper Industry
71 Columbia Street
Seattle, Washington

My dear Thorpe:

As General Convention Chairman of the recent Pacific Section Meeting at Portland, I want to personally thank you and your organization for the splendid support, cooperation and encouragement which you gave for the full time, approximately three months previous to the convention and for the active support which you gave during the convention.

The Convention Chairman has difficulty as a rule in getting the proper attendance and the publicity and personal efforts on the part of your organization certainly helped bring out the delegates.

I hope that they did not come in vain. The active and businesslike manner in which everyone took part certainly speaks well for the interest in the Pacific Section. The social features were arranged so that there could be some relaxation from the strenuous business session and I hope too, that this was satisfactory to everyone.

Again allow me to express my deep appreciation for the very kind suggestions and help which your organization gave. I wish that you could find some way of expressing to all members and delegates in attendance at the sessions as well as the officers, the appreciation for their whole-hearted support and enthusiastic participation which they evidenced by their attendance.

Yours sincerely,

RAY SMYTHE.

Ray Smythe
dvb

Harry Andrews, chief chemist of the Powell River Company, Ltd., used the blackboard profusely when he enlightened the audience on "Corrosion in a Pacific Coast Groundwood Mill System." He brought out the point that acidity is a controlling factor in the curve of the degree of corrosion. Adaptation of ways and means for resisting corrosion at the source, such as the installation of wood pipe and copper fittings, have shown themselves to be great helps in improving product. Mr. Andrews' paper appears in its complete form in other pages of this issue.

In his absence, a brief paper on "Developing New Uses for Pulp and Paper," was read for the author, Arthur Zimmerman, manager of the Pacific Straw Paper & Board Company.

Although we have a chemical formula for cellulose, the equation, insofar as actual knowledge of the substance is concerned, would more appropriately be expressed as (?). That was the comment of Prof. W. L. Bueschlein, Department of Chemical Engineering, University of Washington, in an interesting talk on "New Uses for Cellulose." Advance into lesser known fields, Prof. Bueschlein explained, has already been notable, but we have little real idea of what may lie ahead. "We are now making artificial straw from cellulose. Perhaps we may some day have some one engaged in collecting artificial straw to make paper out of it."

The chief thought in the paper by "Bush" was to emphasize the possible outlets for wood pulp in the fields of chemistry, and to stress that production of pulp, for the chemical markets demands an exacting control of manufacture, a technical control that will be able to predetermine the products within close and definite limits.

SATURDAY SESSION

The Saturday morning session concluded with an admonishment, "A Printer Tells The Paper Manufacturer," by Ralph H. Mort of the Metropolitan Printing Company of Portland. Mr. Mort injected a pleasing note of humor and helped the paper maker to understand what happens to his product after it leaves the mill.

The Saturday luncheon was a scream, no less. The attendance was splendid. The shining light was one Dean Collins, of the staff of The Oregon Journal. The title of his address was simply "We Have Fun" and the production certainly lived up to its title.

A. D. "Dad" Wood presented a splendid paper, full of the human heart, as the opener for the Saturday afternoon session. The paper is presented in complete form in other pages of this issue.

The formal papers on the Saturday schedule wound up with a discussion of "The Chlorination of Wood Pulp" by Ralph Hansen, of the Weyerhaeuser company; "Maintaining Uniform Cooking Acid Conditions," by James P. V. Fagan, superintendent of the Puget Sound Pulp & Timber Company, and "The Passivating Effect of Sulphite Liquor on Stainless Steels," by H. H. Richmond, research engineer for the Electric Steel Foundry Company of Portland.

A new feature in Pacific TAPPI programs was trotted out as the closing event of the technical sessions. It was the Question Box. Members had submitted anonymous questions prior to the convention, and these had been tabulated and answered by referring to different authorities in the field. Chairman Hansen read the questions and the compiled answers and then floor discussion followed. Sample questions follow: "What

is the most suitable stainless steel?" "What is the effect of calcium chloride in stock?" "What allowance should be made in pulp strength tests to reduce to bone dry basis?"

The Question Box brought out some good discussion and Chairman Hansen greatly increased the value of this part of the program by getting the various members on their feet and suggesting that they discard their modesty.

The serious business of the two-day convention closed late Saturday afternoon with a discussion of the practical side of operating the Pacific Section. It appeared that finances are the root of all evil, or at least of difficulties, and between Chairman Hansen and Conventioneer Ray Smythe the assembly got an earful of how to run a meeting on nothing, or slightly more than that. It was obvious that the 90-10 division of membership dues, with the Section on the lesser end, was entirely inadequate. There was a distinct feeling that the Section meetings have now found solid footing and are a distinct asset to members of the region in providing periodical opportunities for mutual discussion of problems and social contact. However, the funds available to the Section, as evidenced at the Portland meeting are entirely inadequate in financing the meetings. The discussion presented a very practical problem and a very definite threat to the continuance of the regional meetings and indicated that the question of division of dues would be reopened with the national office.

The official two-day program wound up on Saturday evening with an informal stag banquet that was a "wow." The strain of listening to deep discussions for two days was over with and the technical men resolved themselves into just human folks, eager for entertainment, music, and goodfellowship.

The Portland meeting has come and gone. It provided 48 worthwhile hours of education, mental stimulation, entertainment, the plain joy of living, and discovering that your neighbor is a mighty fine fellow and that life is being economized upon just a little too much if you don't get acquainted. The Portland meeting certainly set a high mark for the next session to equal or better.

Grays Harbor Mill Speeds Operation

Due to sales improvement during the last 90 days, the Grays Harbor Pulp & Paper Company's big plant at Hoquiam, Washington, is operating on a full production basis, according to W. S. Lucey, manager of the plant. This schedule prevails for the pulp mill only, the paper mill continuing operations at the rate of 87% capacity as it has been doing for some time past. The new production schedule means about 300 cords per day additional pulp wood use and has already resulted in the opening of a new pulp wood cutting operation near Hoquiam.

Commenting upon the speeding-up, Mr. Lucey stated: "The outlook in our business appears somewhat better, and as a result we decided to speed up a bit for the next month or so. How long it will continue we cannot say, but we hope it will keep up."

The pulp mill has been one of the steadiest operations on Grays Harbor thruout the slack times, and supports probably the largest payroll in the district. The increase in production schedule meant work for an additional number of men and women in the mill besides those employed cutting pulp wood. It is estimated that the increase boosted Grays Harbor payrolls by $1,500 daily.

Experiments With Sulphite Liquor For Settling Dust

"About nine or ten years ago we built a small tank on a wagon and started sprinkling the roads in the mill yard and adjoining community with sulphite waste liquor," reports Myron W. Black, technical director for the Inland Empire Paper Company, Millwood, Washington. The success with this little venture was very marked in the way of both settling the dust and improving the surface of the roads.

A few years later, after application in various localities, Opportunity Township, in which our plant is located, tried the sprinkling of roads throughout the township also with very favorable comments from those located near the roads sprinkled. During the same year the adjoining township (East Spokane) also tried the experiment.

All results have been most gratifying and during the last summer season both townships had tank trucks in operation most of the summer season. In addition we also supplied smaller quantities to the town of Greenacres and to Spokane County. At the time of this writing the City of Spokane is giving it a trial on the city streets which are unpaved and we expect this trial to be most satisfactory to them.

In handling this liquor we have only pumped it from the blowpits at the start in order to get the most concentrated liquor. We have not neutralized or concentrated it in any way. Of course our experiment has been carried out near the plant and it is doubtful if the use could be extended any great distance due to low concentration and attendant transportation cost.

The period of application has been from May to September when the district is most bothered with dust. The method has been to use a sprinkling truck such as are so common in our cities.

It is not necessary to go over a road indefinitely as three or more heavy applications will, as a rule, give you a surface closely resembling oil. The material, in our climate and on our gravelly soil, does not appear to leach badly since roads will come through a winter season of rain and snow showing much the same surface as the previous fall.

It would be hard to estimate the amount of liquor used in gallons and also not a fair comparison since only the most concentrated has been used.

We have the highest hopes for the continued use of this waste liquor and expect to extend it more each year. The capacity of our sulphite mill is small so that we cannot hope to cover a very large territory.

The only apparent difficulty we might experience is that in time the roads will all be dustless from the waste liquor and no more will be required. However, some of the railways have tried it and although the initial results were not so satisfactory as oil (Pasco cut on N. P. Ry.), we still believe it should be cheaper and just as effective for the territory within reasonable distance from our plant. So unless the railways are to be pushed out of business we feel there is yet an undeveloped market.

Britain Revokes Abnormal Import Duties

A new tariff order in the United Kingdom revokes all abnormal import duties on manufactured goods effective April 26 and imposes effective same date varying rates ranging from 15 to 33-1/3% on these and most other classes of manufactured goods. Wrapping paper, which has been subject to an abnormal import duty of 60% will be one of the classes affected.

YOU CAN'T PROVE IT ON THE BLACKBOARD

A Superintendent's view on Coordination Problems

By A. D. WOOD, Superintendent
Shaffer Box Company, Sulphite Mill

A paper presented at the meeting of the Pacific Section of TAPPI at Portland, Oregon, May 6 and 7, 1932.

WHILE talking with one of my brothers several years ago, relative to efficiency in mill management and operation, which seemed to be the text of nearly every discussion among mill men at their formal and informal conventions, I asked his opinion as to the real reason why so many schemes which are so scientifically figured out in offices fail to bring forth the expected results when the ideas are put into practice in the mill.

I explained to him at some length that one expert wanted to install a pyrites burner which would lower the sulphur cost per ton of pulp at least a dollar or two. Another had a wage bonus scheme which would cut the cost per ton about an equal amount. Then there were efficiency engineers, steam engineers, supply men and chemists, and the sum total of all the savings claimed was an amount in excess of the total cost of production including raw material and overhead. Each one could figure out his claim and prove it to be right on a blackboard.

My brother answered me by saying: "Al, there is a popular superstition in this country that two and two make four. It always figures out that way on a blackboard; but in the world in which you live and work you are safe in saying that two and two seldom make four. Suppose you had two million perfectly normal jack rabbits out here in one field and two million of their sisters in an adjoining field and you put them together. By the time you could get them counted, even with extra help and an increased payroll, the results would not tally with the blackboard calculations."

The worth of the blackboard figure is that its value "stays put", but in the practical every day life of the average mill superintendent he is dealing with things that are constantly evolving into something else and it is a perplexing problem to accurately record in blackboard numerals the value of practices which he has proven in his own mind to be definitely worth while. This is particularly true of that portion of his duties which has to do with human engineering. According to blackboard figures, a man ought to perform as much labor on a twenty-four-hour shift as he would in three shifts of eight hours each but I have a lurking suspicion, possibly it is only a super's superstition, that this is not true. I make other claims which my limited knowledge of office mathematics will make it very difficult for me to prove on a blackboard. I am satisfied in my own mind, however, that misfiguring causes a lot of strife and contention—and many a problem has been set down in cold figures with little or no allowance made for associated phenomena. Schedules based upon such calculations may be forced upon the superintendent and militate against good team work.

Personally, I like to think of the mill operating organization as a big team playing a mighty interesting game. I like to see the boys on their toes watching their chances. Often, when seated in the grandstand or out on the bleachers waiting for the baseball or football game to begin, or, after the game, when back on duty, I have made comparisons between the playing organizations and the working team back in the mill, for in these play-games we witness striking demonstrations of coordination. Some of my reveries may be of interest.

I have thought of the owners of teams, the ones who own the ground and the grandstands, collect the gate money, and pay off the players, and of their relationship to the game. I suppose these owners pay the coach for his services. It seems to me that any man who owns a team has a perfect right to break into the game at any time and cut down the playing force. He pays the coach and has the authority to tell him to change the players around to suit his fancy, just as a mill owner has a right to make changes in his working team, but a wise owner of a playing team or a working team will proceed along that line with great caution. Sudden and drastic changes of policy disturb players and workers who have their heart in their play and in their work. An expert on the blackboard may have proven to the owner that by dispensing with the services of a high salaried player, who apparently is not very busy in the current games, the amount paid him in salary will be saved, but he may pick for dismissal the best pinch-hitter in the whole bunch and no one can accurately estimate the cost of this move as reflected in the attitude of the coach and the team toward the playing of the following games. The team may be changed from a winner

Dad Wood

into a loser, though that result never appeared in the blackboard figures. An industrial manager or mill owner may cut down his payroll, thereby disheartening and discouraging his coach and every member of the team, and the promised savings be turned into an incalculable loss.

This is not intended as a criticism of my employers, for all of them in recent years have given me their full confidence and support, but sometimes a "super" has ideas about the value of certain individuals in his working force, just as a coach knows his players. We "supers" may believe that one man is sometimes worth double as much to the organization as another of the same rank and drawing the same pay, but it is something we can't figure out.

The method used in hiring men may have a good or bad influence upon the team of tomorrow.

If I was in a position where I was selecting men for a playing team I'd have a long heart-to-heart talk with every applicant and before he was enrolled there would be a complete understanding and agreement between us. Before hiring a foreman, machine tender or laborer for my working team I'd take the same course. If the applicant is not willing to do any kind of work at any time and do it cheerfully he cannot enlist. This avoids possible friction in the future and is also a big help in meeting emergencies and in keeping the mill clean.

There is always a chance for friction at the points of contact on any machine and some of the main bearings of the mill machine are found at the meeting point of the Operating, Technical Control, and Repairs and Maintenance Departments. It is the job of the "super" to keep these friction points properly aligned, adjusted and lubricated. In making the alignment the key men of these divisions must be brought to see the mill problems from the superintendent's angle. They must see the necessity of keeping in line.

We all know that in starting a machine it is advisable to run the bearings, the points of contact, with a light load, and the wisest chief executive with whom I ever had any dealings used to bring the heads of these departments together, sometimes accompanied by their key men, and give them a good dinner. As the bearing surfaces smoothed out he applied the load. Vocational Education and Foremanship Training Classes were splendid lubricants.

One time at a little gathering, representing the Operating, Technical Control and Repairs and Maintenance Departments, one of the operating foremen made the remark that he had the damndest mixture of men in his crew that one could find anywhere. He said: "I get all the green men and the blue and grouchy men, bolsheviks almost ready to hoist a red flag, and some others who are yellow as—well, they are yellow." I said: "Billy, that gives me a couple of ideas; first, that you put on a couple of Orangemen and, next, that we call your crew the Rainbow Division." I told him that that reminded me of the time when I was a little boy and my father showed me a rainbow in all its glory. He named the different colors and then amazed me by saying: "If all those colors are mixed together the result will be white." That is another thought: Perhaps, if we go to our green men and give them a lot of patient and careful coaching, take the fellows who show a streak of red and help guide their thoughts so they may see things in a true light, if we go to the men who are blue and despondent and show a little friendly interest, if we encourage the one whom we think has a streak of yellow, perhaps we can blend them into a good working team of white men.

Before we can have a really good working team thruout the mill, every worker must feel that if he plays the game square and fair and is truthful and honest, he will get a fair square deal. Rumors reach us sometimes that in some plants there are spies employed whose duties are to inform the head office of any infraction of rules or any irregularities. I do not believe that a plant can be nourished on a diet of gossip and backbiting and enjoy the fruits of cooperative effort.

If we want the members of the crews to get into line and do their best, we must set them a good example of cooperation and good fellowship. No key man, from the superintendent to the straw boss with the smallest crew, should ever let one little word of gossipy criticism pass his lips concerning any other member of the group he represents or of any of the "higher ups". If complaints are to be made it should be in the presence of the superintendent and with as little publicity as pos-

It is a perplexing problem for the superintendent to record definitely some practices known in the mind to be distinctly worthwhile.

Misfiguring causes a lot of strife and contention.

Many a problem has been set down in cold figures with little or no allowance made for associated phenomena.

I like to think of the mill operating organization as a big team playing a mighty interesting game.

sible. A superintendent must exercise good judgment as to how, when, and where, he indulges in the bestowing of blame as well as praise.

Further, if he has any criticism to make to those under his supervision and for whose work he is responsible, let this be done in as private a manner as possible and let his thoughts be clothed in the proper language. I am not in favor of invoking the condemnation of the Almighty upon the head of a fellow worker, or of making irrelevant remarks concerning his ancestry because in his inexperience or awkwardness he has broken a test tube or knocked out a window pane.

At one time a superitendent took exceptions to this ruling. His own brother was working for him and he thought it would have a good influence on the rest of the gang if he gave his brother a little blue hell every morning. He pre-arranged with his brother so that he would take this cussing with appropriate submission; all went well until one of the workmen who had listened to his scandalous talk reported it to his wife who said: "That old lady, the mother of both of these men, is a member of our "Over-the-Teacup" Club. We meet twice a week and she takes up a lot of time bragging about her boys and I'm just going up and tell her at the next meeting what this son of her's is saying about her." So if you must call a fellow that kind of names, pick out your brother and talk to him. But bear in mind that some one may go and tattle to mother.

Aside from the wear and tear on the individual, it often costs the company a lot of money when the "super" or head man of a department gets mad. I can't give the cost sheet figures on this but some owners, managers and superintendent are terribly wasteful in this respect. Good working organizations are disrupted in a minute. An inter-departmental quarrel in a mill is like a dog fight in a garden. Oftimes we cannot decide which dog has won but there is no doubt as to what has happened to the garden. When the rank and file in the working force once understand that the owners, manager, superintendent, technical chief, master mechanic and operating foreman, are members of a team that is loyally and harmoniously working for the permanent good of the plant, and that they are sure of just and considerate treatment in all their dealings with the "higher ups" it will make them feel like joining the team. On the other hand, if there is a feeling of insecurity, if the men are wondering when the next upheaval will take place and who will be the goat, there is little chance for intensive team work.

I have asked this question of working men whom I have met in a casual way, here and there: "What kind of an outfit are you working for?" Sometimes the answer has been: "Well, they're not so hot with their wages, some companies pay more, but they are mighty good people to work for and if you are sick or have an accident they'll look out for you and the family and take care of you just as tho you belonged to them. And they'll give you steady work whether the mill runs or not."

Another answer has been: "They pay good wages but it is a son-of-a-gun (only they didn't say gun) of a place to work. They don't give a damn for a man; I'm only staying because I can get the wages."

I have figured out which one of these companies I'd like to hold stock in, but I can't give you the mathametical formula of how I arrived at this conclusion.

In one plant where I worked it was the rule that if any department was shut down, or any changes were made which threw men of a job, to use these men on various kinds of work around the plant until such a time as they might be absorbed in the regular crew. The big boss simply told the superintendents to quit hiring and pull the necessary help from the "clean-up crew". One might say that this kind of a program is all right if the business has been profitable enough to build up sufficient reserve funds. But here's a thought: Perhaps when a business is run on that kind of a basis it is bound to prosper. This is another thing that won't figure out on blackboards. We are all sure that we cannot get something for nothing. Isn't it possible that this is a good rule that works both ways and that it is just as much of a truth that we cannot give something for nothing? What I mean is that when we give there must be a reaction and that we must receive something in return. Isn't it likely that something will be returned to us if that gift is in the form of generous treatment of a faithful worker?

I have a hope that some day, when, by cooperative effort between owners and their working teams and owners and their government, the real costs of inter-

In making changes in the working team the wise owner will proceed cautiously lest he disturb those whose heart is in their work.

An inter-departmental quarrel in a mill is like a dog fight in a garden. You can't always tell the winning dog, but there is no doubt about what happens to the garden.

Solomon, wisest man, asked the Lord for an understanding heart, not a big stick, that he might rule the people wisely.

rupted operation are brought to light, we may have some sort of employment insurance that will help hold our trained teams together. I mention this now for it would be a mighty good time to sell employment insurance to men at the time they are again hired and return to work.

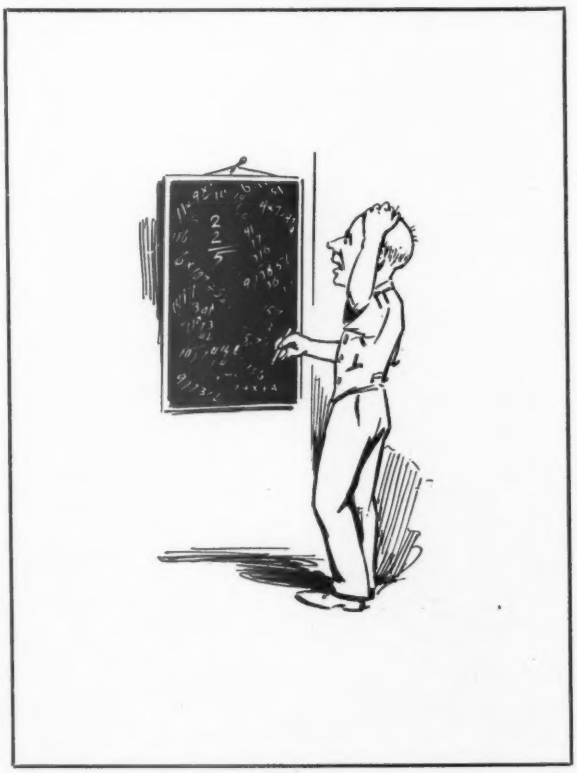
It is strange things that happen may impress us and be a help in "keeping our heads on our shoulders and our feet on the ground."

I heard a sermon once that helped me a lot. The preacher chose as his text: "And It Came to Pass". Those of you who attended Sunday School and studied your lessons will remember that this paragraph is used many, many times in the Good Book as a kind of preface to many stories. This preacher changed the meaning of the words by introducing a comma after the word "came" so that the sentence read "And It Came, (comma) to Pass". He told us in a very impressive manner of the many trials and troubles of life which come to pass (away) and made many suggestions as to what to do about it. The little talk impressed me so much that ever since that time, when I've been fighting a breakdown, waging a battle with "broke", suffering from a sulphur gas attack or enduring punishment such as seems to be the lot of every superintendent, I've been comforted by the thought that all these things come, to pass. All these things pass away. And many a time when I've felt like blowing up I've been able to grin and say: "This, too, will pass away."

A "super" may be tempted to feel at times that his life is a kind of endurance test, that he is a link in a chain with one end in the office and the other in the mill and both ends pulling in their particular directions. He feels that he lacks something, but he can't figure out what's missing. When in that mood another Sunday School lesson might help.

When the strength of King David was waning away and it was decided that the time had come when he should give up his job, his son, Solomon, was appointed to take his place and this wisest man who ever lived, feeling his weakness, made a prayer: "Give me, O Lord, an understanding heart that I may rule this people with wisdom." It struck me quite forcibly that he did not pray for a big stick that he might make the folks step lively, nor for a blackboard and chalk so that he might out-figure someone, nor for a loud voice that he might "get someone told". He just asked for an understanding heart.

Perhaps if we "supers" would pray for understanding hearts, that we might better understand the problems of the owners and the managers and be a little more tolerant with the poor devils, if we would day-by-day work for the development of the understanding heart in our association with our co-workers, even with the chemists and engineers, if we would be good scouts among those whose efforts we are directing and demonstrate to them that in our hearts we understand, we might solve our co-ordination problems. But I could not prove it in figures on a blackboard.



C·O·R·R·O·S·I·O·N

in a Pacific Coast Groundwood Mill System

By I. H. ANDREWS, Chief Chemist
Powell River Co., Ltd., Powell River, B. C.

A paper presented at the meeting of the Pacific Section of TAPPI at Portland, Oregon, May 6 and 7, 1932.

GROUNDWOOD and newsprint mills have been great users of iron pipe, fittings and equipment. While for the pre-war years it was probably the custom to use a genuine wrought iron pipe, since then there has been generally put into service the so-called wrought steel pipe and fittings. With the wrought iron pipe great service was secured; but with the wrought steel pipe not nearly the same service was attained, corrosion being very apparent.

Generally speaking, after the introduction of the wrought steel pipe, groundwood white water systems were gradually closed in, that is the large amount of fresh water make up was eventually reduced to the necessary minimum and there was considerable argument as to whether the short life of the wrought steel pipe was the result of the closing in of the white water system or lay in the pipe itself.

In the old days, with the open system and lots of fresh water, acidity was not so much a factor in the groundwood mill; but the closing in apparently built-up an acidity which introduced quite a corrosion problem. This acidity is developed at the grinders; but as far as is known just what the particular acids are and their development is not clear.

The following Table 1 gives an idea of the acidity which is developed in a closed-in groundwood mill. The acidity values were made of the water after filtering off the pulp.

TABLE 1.

Groundwood Acidity: Closed-in System

	pH	Ml N/10 NAOH for 1,000 ML to 7 pH	Pct. Dissociation
Pulp From Grinders—			
Fresh Water Showers:			
Spruce	4.0 — 4.5	10.6 — 5.8	9.43 — 5.45
Fir	4.2 — 4.9	7.7 — 3.4	6.20 — 3.71
Hemlock	4.6 — —	3.9 — —	6.43 ———
White Water Showers:			
Spruce	3.9 — 4.4	13.2 — 6.2	9.54 — 6.42
Fir	4.1 — 4.5	9.9 — 6.8	8.02 — 4.65
Hemlock	4.6 — —	4.8 — —	5.23 ———
Pulp Screened and Thickened:	4.5 to 5.2	4.0 to 1.2	7.90 — 5.26

The effects of such an acidity as noted above, with respect to corrosion, in a groundwood mill producing some 350 tons oven-dry pulp per 24 hours, in which the pipes were mainly of the wrought steel type and cast iron parts were freely used, is noted in Table 2. Here there are data relative to the iron content of the pulp. It will be realized that "Thickened pulp after screening" refers to the groundwood pulp as ready for mixing with the sulphite.

TABLE 2

Iron in Groundwood Pulp: Closed-in System

	Ave. Pct. Iron (on oven-dry basis)	Ave. Lbs. Iron Pick-up Per 24 hours
In Wood	0.0055	———
In Thickened Pulp After Screening	0.020	101.5
Ditto Monday Morning Start-up	0.030	———

An analysis of a separate sample of the thickened groundwood stock showed that the disposition of the iron is as follows:

	Per Cent
In white water carrying this pulp	0.0006
In pulp	0.0124
Total	0.0130

It is of interest to note that the main body of the iron is precipitated on the fibres. It is also a matter of passing interest that washing the pulp removes quite a little of its iron content.

According to published data on iron corrosion, it appears that oxygen concentration is a deciding factor in the rate of corrosion for a certain range of degree of acidity; but beyond this range the rate increases very rapidly. Apparently this change takes place at different pH's depending upon the particular acid or acids. It would seem that in the case of the closed-in groundwood system the acidity often gets into this rapid part of the corrosion curve, i. e., where acidity is a controlling factor in the curve. It would, therefore, appear as if something to obviate the corrosion could be accomplished by means of neutralization. Other than neutralization there is the use of corrosion resistant materials.

TABLE 3

Iron Pick-Up During Periods of Partial Neutralization — Closed-In Groundwood System

	Acidity of System	Lbs. 24 Hrs. Neutralizing Agent	Iron In Pulp: % Oven Dry Basis	Iron Pick-up Per Cent	Iron Lbs. per 24 Hrs.	Decrease Lbs.	Decrease Pct.
(1) Normal	5.0	------	0.0147	0.0086	60	----	-----
Using Sod. Carbonate	6.2	825	0.0082	0.0021	15	45	75.0
(2) Normal	4.8	------	0.0195	0.0145	102	----	-----
Using Sod. Carbonate	6.2	1425	0.0087	0.0046	32	70	74
(3) Normal	4.6	------	0.0190	0.1400	98	----	-----
Using Sod. Carbonate	3.0	475	0.0145	0.0950	66	32	31

Experimentation along the lines of neutralization indicated that the pH of the system could not always be brought above 5.5 without danger of discoloration of the pulp. In other words, even before neutralization is reached, the alkaline earth bases link up with some compound or compounds to produce a noticeable darkening effect on the pulp.

As to means for lowering the acidity, lump limerock, powdered limerock and soda ash were tried. In the case of the lump limerock this was put into the white water system; but it was found to be unsatisfactory due to its becoming clogged with pulp and besides, too much space would have been required to produce any results. Powdered limerock and soda ash were easier to work with and in the experimentation, the latter was used, in the main, on this account. Table 3 shows the results obtained with its use, giving the effects on acidity and the iron pick-up. There is also the weight of soda ash used per 24 hours for the 350-ton mill.

It will be noted that the reduction in acidity materially reduced the iron pick-up; but it was realized that partial neutralization was probably too risky to carry out and also it seemed that recourse to corrosion resistant materials would be much the better course to follow.

In the case of a 100-ton groundwood mill wherein the piping is all of wood stave, the fittings of copper and there being only a small amount of iron in the whole system, just what results are attained is shown in Table 4. Besides this there are data showing the reduction in iron pick-up for the 350-ton mill mentioned heretofore after the program of iron replacement with wood stave and copper pipe and certain grinder and screen parts with chrome cast steel was on its way.

TABLE 4

Iron Pick-Up with Corrosion Resistant Materials

	Iron (Per Cent) In Wood	In Pulp	Pickup
Old System (iron)	0.0050	0.0200	0.0150
Old System (partially changed over)	0.0050	0.0124	0.0074
New System	0.0054	0.0059	0.0005

In order to have data on various materials as to their corrosion resistance with respect to the groundwood system for present and future use, it was deemed advisable to carry out accelerated corrosion tests. Accordingly the corrosion as found by subjecting test specimens to the splashing of hot spruce pulp at the grinder has been taken as a relative measure of how the material would act in the groundwood system.

Table 5 shows data relative to a number of specimens so exposed.

It is notable how much more resistant is the old wrought iron pipe as against the wrought steel pipe now used and it would therefore appear that the arguments placing the blame for the inferiority of the latter on the acidity of the white water system are not upheld. Cast Chrome Steel and copper show up very satisfactorily and these are also standing up well in actual service. Some of the more expensive materials should also serve excellently.

TABLE 5

Corrosion Resistance Test of Various Metals in Connection with Use in the Groundwood System

Specimen—	Days Exposed	Depth of Corrosion Inches per 100 Days
(1) Wrought Steel Pipe	24	0.0310
(2) Wrought Iron Pipe	58	0.0068
(3) Sheet Copper	56	0.0029
(4) Tant Iron	48	0.0290
(5) Tant Nickel	106	0.0044
(6) Tant Copper	106	0.0040
(7) Toncon Iron	23	0.0164
(8) Nirosta	24	0.00003
(9) Cast Chrome Steel (unpolished)	211	0.0027
(10) Cast Chrome Steel (polished)	62	0.00085
(11) Inventor Stainless Steel	101	0.00122
(12) Monel	56	0.0005
(13) Aluminum	125	0.0036
(14) Cadmium Plated Steel	Coating almost completely removed in 22 days.	

Note: In the case of the TANT METALS (4, 5 and 6) one surface was polished, comprising about 40% of the total area, and for TANT NICKEL and TANT COPPER it would appear as if the corrosion were more active on the unpolished surfaces. Such being the case the relative corrosion rate for unpolished surfaces, with regards TANT NICKEL and TANT COPPER, would be probably 25% higher than the figures given above.

It seems to be a characteristic of the special steels exposed, TANT NICKEL, TANT COPPER, and CAST CHROME STEEL, that the polished surface is much more corrosion resistant. Corrosion that does take place here is of the pitting type.

Closed-in systems have apparently built up an acidity which in turn has introduced a corrosion problem.

Corrosion may be obviated by neutralization or by the employment of corrosion resistant materials.

The old wrought iron pipe appears to be much more resistant to corrosion than the wrought steel pipe now used.

Use of wood stave pipe and corrosion resistant fittings has materially reduced the iron pickup in closed systems and improved the quality of product.

PEN POINTS AT PORTLAND

. . . handshaking in the lobby . . . did you drive down? . . . stragglers . . . James P. V. Fagan with two pockets full of cigars . . . registration . . . Ray Smythe dashing around arranging things . . . Harry Andrews from British Columbia . . . pads of paper on the tables . . . some serious notes and some just scribbling . . . Ralph Hansen asking, "Are there any more questions?" . . . engineering on golf score cards . . . gad, but that's a long course . . . Dr. George Kim Lee . . . J. J. Farrell from Downingtown, Pennsylvania . . . impromptu quartettes . . . quite a few new faces . . . several young fellows attending their first meeting . . . today's apprentices . . . tomorrow's executives . . . gray hair and youth . . . Cap Shibley financing a present for the convention chairman . . . bad accoustics in the Ball Room . . . Carl Braun regulating the loud speaker system . . . can you fellows back there hear all right? . . . little groups on the mezzanine . . . smiling Bill McGinnis . . . serious attention at the Saturday discussions . . . everybody has a good word for Dad Wood . . . human understanding makes a good superintendent . . . Earl Thompson with a lot of questions . . . Keppinger giving away samples to the guests down at the Griffith Rubber Mills . . . experiments in bun aviation . . . a whole army down from the mills at Longview . . . Felix Pagenstecher, guest of honor at the banquet . . . ladies in pretty gowns . . . E. G. Drew taking pictures . . . Bob Wertheimer propounding a deep formula on employment . . . and answering lots of questions . . . Al Quinn with a new cigar . . . Ralph Reid with a pipe . . . notes passing back and forth . . . Leo Burdon copping a new chipper . . . rather appropriate at that . . . Arthur Zimmermann not a pound lighter . . . Ken Hall in white . . . H. H. Richmond answering questions on the newer steels . . . cigarets being lit . . . ash trays running over . . . lots of room on the floor . . . Walter Hodges out shopping . . . golf committee . . . Al Hooker telling stories . . . Alec Duncan, braw Scotty and peddler of paper chemicals . . . and his cohort, J. V. B. Cox . . . B. W. Sawyer, showing pictures taken on top of Mt. Hood . . . R. T. Petrie down from Longview . . . the banquet late in getting started . . . Myron Black, who never misses a meeting . . . tickets at the door . . . H. A. Des Marais leading in the singing . . . TAPPI ought to have an official quartette . . . the delegation up from the U. of Oregon . . . Dr. Friedman knows his stuff on cellulose . . . White, Klemm and Coleman, more men of learning from the Pioneer university . . . R. E. Chase presenting views on steel . . . W. H. Goodenough from Hood River, an old time super . . . Dean Collins setting the Saturday luncheon in uproar . . . little checkmarks on the programs . . . can't hear you . . . talk into the mike . . . P. R. Hines and plans of the engineers' council . . . lights dimming now and then . . . Ed Wood smokes a pipe . . . once ran a paper mill in India . . . R. V. Maier and J. L. Wright from General Electric . . . best convention ever . . . but always a few grumblers . . . hard-working committeemen . . . Tom Dunbar from New York . . . Anderson and McJannet, brass founders from Seattle . . . the mezzanine is popular . . . announcements cleverly made . . . the cellophane incident . . . stewards and waiters . . . music . . . Bueschlein and popularity . . . Hylton Long and hard rock . . . laughing Fred Shaneman . . . Ben Larrabee . . . two-day convention is okeh . . . swell turnout . . . Hotel Multnomah . . . bell boys and porters . . . a whole gang down from Weyerhaeuser . . . Gerald Alcorn, Harald Hauff, H. T. Peterson . . . groups of two and three . . . impromptu discussions . . . E. P. Dimmock from Seattle . . . J. E. Hassler looking for someone . . . and finding him . . . Kertz . . . the press . . . Evald Anderson from Los Angeles with bushy hair . . . Shibley with his sox rolled down . . . that man Hansen is a serious person . . . well, have you ever been chairman? . . . Herb Vernet . . . Govro from National Ammonia . . . Dr. Kobe telling how to condense sulphite liquor . . . Sigurd Norman thinking of the time he ran a mill down in South America . . . and Johanson about the time he worked in Cuba . . . big dark haired Dan Dupuis . . . Bill Kelly from Hawley's mill . . . music and singing . . . Dr. Hirschkind who flew up from San Francisco . . . can't do with or without chemists . . . flocks of memorandums around Chairman Hansen's desk . . . discussion on finances . . . a very practical problem . . . Ray Schadt discussing groundwood problems . . . B. F. Irvine, blind editor of the Oregon Journal, giving a stirring address of welcome . . . promoting the industry . . . nineteenth hole . . . Al Dunham, mean golfer . . . Bob Sipes is too serious . . . Paul Hass looking them over . . . tall Norman Kelly, active in sulphite discussion . . . the Question Box . . . we're getting behind our program . . . Conrad from the U. of Washington . . . Frank Small and C. H. Pape . . . T. J. Waltman, knives . . . Schenk from Fitchburg, Massachusetts . . . Al Raught from Weyerhaeuser . . . not for publication . . . Bob Heuer from Weyerhaeuser, second time on the Coast . . . and more Weyerhaeuser men . . . Varney, Hedbring, George Schmidt . . . Shirley from Link-Belt . . . W. T. Mayer from Los Angeles . . . lots of new faces . . . a growing camaraderie . . . Bingham . . . F. J. Dooley registers from Boston . . . Janowski from Hawley's . . . Tom Parks, with samples of blister on boiler tubes . . . Weleber from Hawley's . . . this mill is running strong in attendance . . . Petrie, who knows about vacuum dryers . . . T. E. Moffitt, chemicals . . . W. N. Osborne comments on sulphite testing . . . H. Gevers from Longview Fibre . . . Simpson, another steel man . . . Tom Bannan looking on . . . Duncan of Taylor Instrument . . . Irving T. Rau from St. Helens . . . Bill Williamson, felts . . . Edwards, who knows his hydraulics . . . Albrecht, stainless steels . . . Buckner . . . J. W. Van Alstyn and C. A. Coffin . . . couple men over from Vancouver . . . E. A. Norton . . . E. R. Johnson, contractor . . . Dewey Megel from Hawley . . . Brian Shera, chlorinator . . . friendship . . . contact . . . the finer things of life . . . sociability . . . the gang cheering Ray Smythe . . . victorious troops acclaiming the general . . . a darn good convention . . . and a big move up the ladder for Pacific TAPPI . . . see you next meeting . . .

C·E·L·L·U·L·O·S·E

some new uses

By W. L. BEUSCHLEIN,
Department of Chemical Engineering, University of Washington

A paper presented at the meeting of the Pacific Section of TAPPI at Portland, Oregon, May 6 and 7, 1932.

FOR fifty years the world has been busily engaged in developing products from coal; now, perhaps one might say that we have entered the Age of Cellulose. To you experts in the production of cellulose there is little that I could add in regard to the uses of natural or unaltered cellulose, for you are all familiar with washable papers, paper clothing, brooms, brushes and the like. The chemical utilization of cellulose as a raw material has such wide possibilities that its future development, no doubt, will surpass that of coal and bring about many changes in our economic behavior. This paper describes some of the materials now being prepared and their possible uses.

It is recalled that the first few coal tar dyes were stumbled upon by accident, but that after the chemical structure of benzene was determined, rapid and sure progress was made. Today, we know some of the chemical properties of cellulose but we do not know its chemical structure. Much effort is being expended toward its solution in order that future research may work additional wonders. Chemists write $(C_6H_{10}O_5)^n$ as its formula and of course the "n" is our abbreviation for signifying that we do not know the formula! With glucose known as the nucleus and effort being made to synthesize sugars from carbon dioxide and water, we may yet burn coal to make cellulose.

No mention will be made of the rayon industry. The wide applications of cellophane are familiar to all. The replacement of animal tissues for sausage casings by cellulose has been proposed for several years. A California concern has a method for applying regenerated cellulose coats by the viscose process to fruits and vegetables. The plant contains all the usual equipment for producing viscose solutions, baths and driers. Sized fruits such as oranges, grapefruit, melons and pineapples are treated. The fruit is dipped in the viscose solution and then given three coagulating treatments. A dilute ammonium sulfate solution is used first where the time of immersion is three minutes, the second bath consists of dilute sulfuric acid while the final wash is with water. After drying, the coat is transparent and shrunk tight against the fruit. By blowing air into the viscose bath, pin holes or "breathers" can be formed in the coat.

Metallic screens and other intricate shaped articles are being coated with solutions of cellulose esters in order to avoid corrosion. Such coatings are made waterproof through the addition of tricresyl phosphate. The electro-deposition of cellulose has not been perfected to the extent that rubber has, although research indicates that this problem may soon be on a commercial basis.

Filaments are made to resemble wool by a very simple but ingenious method. Viscose is spun and coagulated in the usual way but upon leaving the bath, the threads are given a sharp change in direction and the drawing pressure reduced. The resulting fiber closely resembles wool. While much effort is being spent upon the isolation of cellulose from straw, we find that artificial straw may now be had. This material is made by extruding narrow hollow bands and then twisting. Cork-like material is made by heating cellulose to 125-135°C with lauryl chloride, a poly ricinyl chloride and industrial pyridine bases. This substance is inert toward many liquids and has a good possibility of replacing the usual cork stopper.

Cellulose esters in great numbers have been made. The most familiar one is the acetate which is made by treating cellulose with acetic anhydride and dissolving the product in various liquids. Evaporation of the solvent does not produce regenerated cellulose as does viscose but a compound of cellulose acetate. Photographic films and Celanese silks are largely made from this ester.

Acetic anhydride is a homologe of many organic anhydrides so it is not strange that many esters of cellulose have been prepared. Butyric acid is the active component of rancid butter and prominent in perspiration. Cellulose butyrate is prepared by steeping cellulose in 80-95% aqueous formic acid for 24 hours at normal temperatures, then treating with butyric anhydride, butyric acid and zinc chloride. The formyl group is removed by boiling with 93% butyric acid. The prod-

uct sinters at 172°C, becomes clear at 208°C and begins to decompose at 225°C. It is soluble in the usual solvents forming highly viscous solutions. Films and threads can be spun from it and greater plasticity is to be had than with cellulose acetate. Crotonic acid is now available in tank car quantities due to its synthesis from acetylene. Cellulose aceto-crotonates are solids melting at 220°C. Shapes of various kinds can be formed by extrusion. Cellulose crotonate is reputed to have greater flexibility than the butyrate.

Entering into the field of synthetic resins, benzyl cellulose has properties which are outstanding. This product is formed by the action of sodium hydroxide and benzyl chloride upon cellulose. It resists alkalies up to 20%, is unattacked by battery acids, decomposes when heated above 180°C, is non-hygroscopic and not affected by ozone. Its electrical properties are such as to lend its replacement of rubber especially where ozone is present. Benzyl cellulose can be plasticised and used in dopes, lacquers, linoleum substitutes and artificial leather. As a powder it can be molded at 120-160°C under a pressure of 1,000 lbs. per square inches. This product is now available in industrial quantities.

The use of wood pulp for the preparation of nitrocellulose explosives has been held back due to the decomposition which occurred during storage. High cellulose pulps have been found satisfactory. Wood pulp is cut into ⅛-inch cubes and nitrated with 40 per cent or more nitric acid. The resultant explosive has a high density and uniform composition suitable for the manufacture of propellant and blasting powders.

These are some of the recent developments wherein cellulose may play an active part. Such developments will demand more and more exacting requirements of the pulp manufacturer, so that it may not be at all strange to find in the near future a vastly greater diversification of pulps. Furthermore, these developments must be made with the cooperation of those producing the raw materials.

The Paper Industry in Japan

Production and sales—March, 1932:

	Production (lbs.)	Sales (lbs.)
Printing Paper, superior quality	11,449,333	13,480,052
Printing Paper, ordinary quality	10,198,069	11,633,244
Drawing Paper	2,747,205	3,153,101
Simili Paper	7,232,618	7,955,427
Art Paper	874,134	905,135
News Paper	43,118,171	45,971,808
Sulphite Paper	5,173,418	4,864,168
Colored Paper	1,344,572	1,098,085
Wrapping Paper	13,559,213	12,807,143
Chinese Paper	1,579,119	1,855,357
Board Paper	6,245,593	7,056,885
Sundries	4,307,064	4,182,247
Total	107,828,509	114,962,652

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES AND CUSTOMS DISTRICTS

FEBRUARY, 1932

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision.)

PULP WOOD

	Rough				Peeled				Rossed			
	Spruce		Other		Spruce		Other		Spruce		Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
Canada and Total	3,166	24,144	22	160	12,363	111,134	8,320	49,155	364	4,813	.....	.....

Total Imports of Pulpwood, February, 1932—24,235 cords; $189,406.

WOOD PULP

	Mechanically Ground				Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Unbleached		Bleached											
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES—														
Austria	.....	.....	.....	.....	.....	.....	1,243	55,062	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	.....	.....	.....	140	4,293	474	21,772	203	5,592	.....	.....	.....	.....
Finland	2,852	65,330	.....	.....	6,025	250,978	1,545	64,208	3,614	118,244	76	3,580	.....	.....
Germany	.....	.....	.....	.....	3,569	122,367	4,660	212,244	.....	.....	.....	.....	.....	.....
Norway	25	543	711	13,946	1,664	53,322	3,888	164,043	1,668	50,043	.....	.....	.....	.....
Sweden	791	14,758	335	6,828	55,750	2,073,635	7,275	295,118	37,039	1,099,127	.....	.....	.....	.....
Canada	12,364	231,222	.....	.....	4,822	175,466	15,315	880,610	1,816	83,779	2,461	223,024	274	11,627
Total	16,032	311,853	1,046	20,774	71,970	2,680,061	34,400	1,693,057	44,340	1,356,785	2,537	226,604	274	11,627
CUSTOMS DISTRICT—														
Maine and New Hampshire	1,925	45,384	34	440	11,489	426,296	6,222	292,146	12,637	384,794	.....	.....	.....	.....
Vermont	942	17,967	.....	.....	478	13,721	1,073	52,769	1,171	52,314	1,810	167,934	187	8,023
Massachusetts	.....	.....	.....	.....	9,118	342,598	5,956	259,840	7,344	220,610	25	701	.....	.....
St. Lawrence	1,013	21,402	.....	.....	202	9,258	1,807	97,816	53	3,343	.....	.....	.....	.....
Rochester	70	1,925	.....	.....	.....	.....	35	1,282	.....	.....	.....	.....	.....	.....
Buffalo	556	10,162	.....	.....	2,550	99,797	1,003	68,738	.....	.....	.....	.....	.....	.....
New York	182	4,645	.....	.....	11,279	392,582	1,229	54,656	508	14,772	.....	.....	.....	.....
Philadelphia	391	7,864	249	4,942	4,142	134,838	2,273	107,715	4,188	115,064	.....	.....	.....	.....
Maryland	2,149	48,090	763	15,392	26,455	1,005,159	6,466	261,367	9,078	272,205	51	2,879	.....	.....
Virginia	.....	.....	.....	.....	4,068	203,479	78	4,193	6,231	195,703	.....	.....	.....	.....
Mobile	.....	.....	.....	.....	61	2,167	.....	.....	.....	.....	.....	.....	.....	.....
New Orleans	.....	.....	.....	.....	.....	.....	100	3,867	2,118	61,522	.....	.....	.....	.....
Galveston	.....	.....	.....	.....	.....	.....	35	1,607	.....	.....	.....	.....	.....	.....
Los Angeles	.....	.....	.....	.....	50	2,807	548	27,951	200	4,649	.....	.....	.....	.....
San Francisco	.....	.....	.....	.....	1,249	23,278	.....	.....	220	3,687	.....	.....	.....	.....
Washington	.....	.....	.....	.....	32	854	73	3,280	.....	.....	.....	.....	.....	.....
Dakota	80	1,496	.....	.....	.....	.....	272	11,797	362	11,797	.....	.....	.....	.....
Duluth and Superior	8,045	136,503	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	679	16,415	.....	.....	797	23,227	7,230	444,033	230	16,325	651	55,090	87	3,604
Total	16,032	311,853	1,046	20,774	71,970	2,680,061	34,400	1,693,057	44,340	1,356,785	2,537	226,604	274	11,627

Total imports of wood pulp, all grades, February, 1932—170,599 tons; $6,300,761.

SULPHITE COOKING

Process Improvements and Controls

By W. N. KELLY, Assistant Superintendent
Weyerhaeuser Timber Co., (Pulp Division)

IMPROVEMENTS in the sulphite process have been greatly influenced during the past few years by the development of the austenetic chrome nickel steels. At the present time four distinct alloys, or types of chrome nickel steel, are in quite general use throughout the industry, and are giving excellent service with practically negligible maintenance costs.

Of the four types referred to above, two are obtainable as sheets, tubes and rods, and two as castings. The rolled products are usually known by their original Krupp formulae KA_2, and KA_2S, as is one of the castings, KA_4. The second type of casting is sold under various trade names and contains quite high proportions of chromium and nickel. These vary slightly with different manufacturers, so for the purpose of this paper this type of steel will be referred to as 25-10.

The term KA_2 is used to describe an 18% chromium, 8% nickel alloy with a maximum carbon content of approximately .16%. The use of this alloy is usually confined to such equipment as blow pit drainer bottoms, since the comparatively high carbon content seems to make it somewhat unreliable for more severe service. It is available in sheets, tubes and rods.

KA_2S is the term applied to a rolled product containing 18% chromium, 8% nickel, but having the very low carbon content of .07% maximum. When properly heat treated it gives excellent service under the most severe conditions to be encountered in a sulphite mill, whether used in rod or tube form.

25-10 and KA_4 are the trade formulae applied to two alloys which are available as castings. 25-10 has a high chromium content, usually about 25%, and a nickel proportion of approximately 10%. KA_4 is an 18-8 chrome nickel steel to which approximately 3% molybdenum is added. Both of these steels are manufactured on the Pacific Coast, and when properly heat treated are thoroughly reliable. KA_4 is sometimes known as KA_2MO. It contains approximately .16% carbon.

By the use of these steels the sulphite mill operator is reasonably sure that a valve or piece of equipment installed today will be giving good service a year hence, with little or no maintenance expense.

The first cost of chrome nickel steel in casting form is still much higher than bronze, particularly where bronze patterns are still being used for valves, fittings, etc., made from the stainless alloys.

The remarkable strength and resistance to corrosion of KA_4, however, will permit much lighter design than has heretofore been considered desirable with acid bronze alloys used for sulphite mill work, and should, therefore, lower the first cost of the chrome nickel equipment. Heretofore, relief piping has usually been made from extra heavy copper, iron pipe size, fitted with vanstone joints. 10 gauge KA_2S welded tube has a factor of safety of 32 at 75 pounds per square inch working pressure and can be obtained for a surprisingly low cost.

During six months time, on an installation of over 50 chrome nickel valves, no maintenance expense whatever has been necessary.

Lime is not deposited to any extent on valves and fittings made from chrome nickel steel. The advantage of this property can be appreciated by most operators who know the delays and irregularities that are caused by lime deposits in steam lines and other fittings. Bronze steam nozzles on digester bottom castings have been lined with 16 gauge KA_2S sheet to overcome "liming" and have given excellent results over many months' service.

Strainers made from either welded sheet or castings of chrome nickel steel do not corrode and seem to be remarkably free from plugging. Also, the periodic drilling of strainers to clean the perforations is unnecessary.

An interesting development in cooking control made possible by the perfection of chrome nickel steels is an automatic relief control valve now in successful operation.

It has long been recognized that a steady and even steam flow into a digester is a great aid toward obtaining uniformity of product and even operation in direct sulphite cooking. At the present time the usual practice in sulphite mills is to regulate the digester relief by hand while admitting the steam by means of a regulator or pressure controlled valve. In a recent installation this procedure has been reversed, the relief and pressure are controlled automatically and the steam is admitted by hand, the steam flow being controlled by the operator following a predetermined curve laid out on a flowmeter chart.

A paper presented at the Spring meeting of the Pacific Section of TAPPI, Portland, Oregon, May 6th and 7th, 1932.

In actual operation great uniformity and excellent quality have been obtained by this method of cooking control. Its use also eliminates all difficulties and irregularities due to variation in relief line pressures.

Several Pacific Coast mills are now using gauge glasses to control and measure the amount of liquor removed from the digester during that part of the cooking period devoted to side relief.

The usual method of controlling side relief is to open the side outlet at a predetermined time or liquor test, and to drain the liquor from the digester for a certain period or until another prescribed liquor test

W. N. KELLY
Assistant Superintendent Weyerhaeuser Timber Company Pulp Division

is reached. However, it has proved to be simpler and easier to control the amount of liquor returned to the recovery system by actually measuring its volume by means of a sight glass.

This method of control is particularly adapted to the West Coast, where the moisture content of the wood used is usually in the neighborhood of 50%. Approximately 35% of the original volume of acid charged to a digester is returned to the recovery system as liquor, even where a high degree of superheat is present in the steam. The combined sulphur dioxide in the raw acid is thus diluted from approximately 1.75% to 1.25%. Under these circumstances, the effect of a few inches of liquor, more or less, relieved from a digester can cause considerable variation in the finished acid, particularly in its percentage of combined SO_2. Actual experience with all three methods of controlling side relief has proved that the gauge glass is the simplest and most reliable, particularly in mills where the storage provided for finished acid is limited.

A great deal of discussion has taken place on the West Coast lately regarding the use of hot acid vs. cold. Hot acid is usually available at temperatures of 60° C. and its use was pioneered in Germany with the object of saving steam. A number of Eastern mills in this country and Canada are using hot acid, but its use is so far rather limited on the West Coast.

Some self evident and proved advantages of hot acid are:

1. Lower limestone consumption.
2. Lower steam consumption.
3. Almost total absence of lime in fittings exposed to direct action of steam.
4. A saving of time on each cook.
5. Lessening of strains on digester linings.

However, it has yet to be proved that acid at high temperature penetrates as rapidly into the chips as acid at lower temperatures containing a higher percentage of free sulphur dioxide. Some observations have tended to indicate that rapid penetration, with its attendant reduction of the amount of screenings produced, is effected more thoroughly by the use of an acid high in free sulphur dioxide than by the use of a weaker liquor at high temperature. It is to be hoped that experimental work will be undertaken to prove this point which has been a subject of controversy for some time. In any case, a hot acid, high in free SO_2, should give extremely rapid penetration.

For a great many years forced circulation, combined in some cases with external heating of the liquor, has been used with good results in the soda and sulphate processes. However, owing to the impossibility of obtaining suitable metals, the use of a positive means of circulation in sulphite digesters was never successful until chrome nickel steels were developed.

Unfortunately, this fact makes the installation of circulating equipment expensive, and so far very few mills have installed any of the devices offered at the present time.

The aim of all forced circulation is, of course, the control and equalizing of temperatures in all parts of the digester. From the standpoint of quality, it is undoubtedly true that with this control assured, the average sulphite mill would be in an excellent position to eliminate what is probably the greatest variable it has to contend with. Uneven temperature conditions do exist and pulp from one zone of a digester may have varying characteristics from that of another, which, when the two are mixed together in the blowpit, will bring the general quality down to a lower average than could be obtained with exact temperature control. Therefore, if sulphite pulp of higher quality is generally necessary or desirable it would seem that a wide field is open to the developers of forced circulation systems.

Omitting the point that it may be good economics to improve quality, it is quite possible that a good return would be obtained on money invested in a system of forced circulation, combined with external (indirect) heating of the liquor.

With this combination there is practically no liquor relief from the digester and thus very little heat is lost. The amount of screenings produced should be limited to such chips too large to properly disintegrate in the cooking time allowed. The breaking down of active chemicals should be eliminated because of the absence of direct contact of steam with the cooking liquor.

However, with present equipment the problem of good circulation is always present, and a study of what might be termed its mechanical side has enabled some mills to greatly improve the thermal conditions in their digesters.

The great majority of wood used on the West Coast has a high moisture content and the chips made from this wood naturally pack tighter in the bottom cone of a digester than chips manufactured from wood with a low moisture content. These effects can readily be observed in a chip bin.

By observing temperatures in different parts of the digester simultaneously, it can be proved that heat is distributed less evenly when this tight packing occurs than when the voids between the chips are larger in size. This is particularly true of mills in which steam is admitted to the digester at one point, thru the bottom fitting, or where, due to limitations of equipment, the steam must be admitted rapidly. A careful study of the method by which the steam admitted to a di-

gester is distributed has enabled some operators to greatly reduce the temperature variations in their digesters with resultant improvement in their product and more economical utilization of the raw materials involved.

When steam is admitted directly to the bottom of a digester, it is, of course, immediately condensed in the liquor surrounding the steam inlet. The temperature of this liquor rises and bubbles of SO_2 are evolved. Therefore, it would appear logical to expect better circulation when an acid high in free SO_2 is used because more gas is evolved during the early stages of the cook. Unfortunately most mills on the coast, or elsewhere, are still subject to acid variations due to climatic conditions. Truly uniform and strong acid the year around is something always hoped for, but never obtained.

Warm water for acid making makes difficult the maintenance of the percentage of free SO_2 which is obtained without difficulty during that period of the year when cold water is available. It is, therefore, interesting to note that simple and compact apparatus is being used more extensively to eliminate the variations caused by seasonal changes.

In its simplest form this apparatus consists of an absorption tower in which the raw acid from the limestone or milk-of-lime towers absorb part of the burner gas as it is by-passed thru the absorption tower. The amount of burner gas that can be absorbed in this system is limited, and a recent development operating with good results, uses pressure as a means of absorbing this burner gas. The equipment consists of a positive displacement blower and absorption tower and gives positive and simple control of the percentage of free SO_2 in the raw acid.

Acid filters of various types have come into quite general use in the last few years. Their use insures that the acid delivered to the storage tanks is free from fine sandy material which does not settle out in a settling tank. Also, if any sulphur happens to find its way into the raw unfiltered acid, it is absolutely prevented from reaching the digesters where its presence might cause serious difficulties.

Powell River Elects

Two new directors were named at the annual meeting of the Powell River Company in Vancouver recently. They were J. Falconer and J. Glen Sample, the latter of Chicago. Mr. Falconer is assistant manager and treasurer.

The officers and directors of Powell River Company now are as follows:

Officers—A. S. Brooks, president; Edward Brooks, vice-president; Paul A. Brooks, vice-president; S. D. Brooks, executive vice-president; A. E. McMaster, general manager; J. H. Lawson, secretary; J. Victor Jaeger, assistant secretary; R. Bell-Irving, resident manager; J. Falconer, assistant resident manager and treasurer; William Barclay, assistant treasurer; G. G. Heighway, local auditor, and J. A. Kyles, mill secretary.

Directors—A. S. Brooks, Edward Brooks, Paul A. Brooks, S. D. Brooks, F. T. Griffith, A. E. McMaster, R. Bell-Irving, R. H. Scanlon, J. Falconer, Glen Sample and J. H. Lawson.

Hawley Pulp & Paper Company is having a little cleanup campaign. The front porch of the office building has been repainted and the plant buildings and yards are being furnished.

Supers to Meet in Buffalo

"I am confident that the biggest gathering of expert pulp and paper makers that has ever occurred will mark the Thirteenth Annual Convention of the American Pulp and Paper Mill Superintendents' Association," said Fred J. Rooney, mill manager of the Upson Company of Lockport, N. Y., who is chairman of the General Convention Committee.

"The convention will be held June 2, 3 and 4 at the Hotel Statler, Buffalo, N.Y., and a most comprehensive program has been arranged for the purpose of presenting to these paper making experts the very latest information on all recent improvements in pulp and paper making equipment and processes.

"Papers will be read by recognized authorities on various phases of the paper making art, and these papers are being prepared with the sole object of enlightening the superintendents as to ways and means of reducing the cost of producing pulp and paper.

"In addition to the long list of papers, there will be a general "Question Box" conducted by National President Roy H. Kelly, who is general superintendent of the Marathon Paper Mills Company of Rothschild, Wis. Questions will be asked by visiting superintendents seeking assistance in the solution of problems that confront them in the operation of their mills. Each question will be thoroughly discussed from every possible angle by men of considerable experience and it is expected that these discussions will result in satisfactory solutions to many such problems."

Canadian-British Trade Agreement

The new trade agreement negotiated between Canada and New Zealand is not expected to have far-reaching effects on the British Columbia newsprint and pulp business in spite of the preferences provided.

British Columbia now controls a large proportion of the New Zealand paper business and newsprint operators said that enforcement of the agreement would not alter this proportion much at present, altho as general business recovers there is every likelihood for a big increase in exports to that market.

"The chief benefit of the agreement is goodwill," said one newsprint man. "When Canada negotiated a similar agreement with Australia we were afraid that there would be retaliation from New Zealand because of certain preferences given to Australian goods as against New Zealand goods. We were doing about two-thirds of the newsprint business in New Zealand at the time and the United Kingdom did most of the rest. New Zealand business interests advocate that, in view of the discrimination in the Australian trade pact, the ratio should be reversed. If the threat had materialized it would have been a hard blow, but fortunately things went on as usual and we continued to receive the bulk of the business. The new agreement should establish good feeling between the two dominions on a permanent basis and lead to greater business in the future."

Altho woodpulp is specifically dealt with in the list of preferred products, British Columbia exporting mills will not be greatly benefitted, according to Lawrence W. Killam, president of B. C. Pulp & Paper Company. "We are already getting about as much business from New Zealand as we could expect," he said.

"Trade agreements are a good thing, but this one will not materially help us at the present time," was the comment of J. J. Herb, president of Westminster Paper Company.

PAPER TRADE CONVENTION

Jobbers talk shop at Del Monte

THE fifteenth annual convention of the Pacific States Paper Trade Association at Del Monte May 12 and 13, was a gathering of competitors in close counsel seeking to avoid the pitfalls of the present day, taking needed steps based upon the necessities of the times and endeavoring to find new means of increasing their business.

Credit control, simplification of printing and wrapping papers, advertising, scientific mark-ups, application of excise or other taxes, standardization of sizes of sample books — these and other subjects were on the program and were covered by papers and discussions during the two days of the meetings.

And following the convention, those in attendance said they never before had obtained from earlier similar meetings so much real, meaty constructive thought. Facing present conditions, the delegates threw overboard the fluffles and ruffles so generally evident at such meetings and got down to business from the start and dealt only in cold, hard facts thruout the meeting.

It was a shorter convention than the association has been holding in recent years but the attendance was very good, coming to within twenty of last year's meeting. There weren't as many paper mill men as usual out from the east but the western manufacturers and representatives of eastern plants were there in good numbers and, as usual, conducted the convention golf tournament.

Harold Zellerbach Elected

Harold L. Zellerbach was re-elected president. Mr. Zellerbach, who is president of the Zellerbach Paper Co., San Francisco, had served part of a term as acting president, having been elevated from the post of executive vice-president to the presidency last month, following the death of President Edward Allen Doran. Arthur W. Towne of Blake, Moffitt & Towne, San Francisco, was chosen executive vice-president and is in direct line for the presidency next year. It was decided to hold the 1933 convention again in May at Del Monte.

One of the most important subjects discussed was credit control, whereby the abuse and misuse of credit facilities is minimized. Secretaries of the various paper and printing trade groups along the coast reported that the present credit plan, now in operation, was working successfully. The plan has been in operation in Los Angeles for more than a year and J. R. Coffman, secretary of the Los Angeles Wholesale Paper Jobbers Association, told the convention that it had produced splendid results in cutting down losses. Since the plan was set in motion in Los Angeles, it has also been adopted by the organizations of Seattle-Tacoma, Portland and San Francisco and is now being put into effect in Salt Lake. The credit control plan is used for printing accounts only.

Reynolds Suggests Promotion Plan

W. B. Reynolds of the General Paper Co., San Francisco, speaking on the subject "A Suggested Plan to Stimulate Sales of Paper for Advertising Purposes", came forward with a suggestion that the paper trade houses or trade associations conduct an advertising campaign to point out to business men that never before could good printing and paper be had at such a low cost. Billboards were suggested by Mr. Reynolds and a follow up campaign with booklets and by the printing houses is included. Mr. Reynolds said such a move would be a blow at the depression and might set into motion many unspent advertising dollars. He showed sample billboard copy for this campaign. Considerable interest was shown by the delegates in this suggestion and it was referred to the executive committee for discussion and action.

The convention went on record as favoring proposed legislation now before Congress to prohibit the government from printing corner cards on envelopes, it being pointed out that printers and paper houses thruout the land would benefit by the scattering of this work instead of it continuing to be done at the government printing office. This enactment is contained in the Romjue Bill (H.B. 8576) and the Oddie Bill (S.B. 4080).

H. Arthur Dunn, San Francisco, secretary of the association, reported on the subject of "Excise or Other Taxes and Their Relation to Prices, Contracts, etc.", and told how the proposed federal taxes would be applied if they are passed by Congress.

Several years ago the association established the practice of compiling data on which were issued percentage statements showing the volume of business being done by the paper trade houses. This year's convention decided to continue this plan but to divide the coast territory into three zones for classification, the Pacific Northwest, the Northern California and the Southern California.

The necrology committee brought in resolutions of regret at the passing, during the year, of three members of the association, Edward Allen Doran of Blake, Moffitt & Towne, A. F. Rogers, of the Spokane Paper and Stationery Co. and Alexander James Lewthwaite, for many years with the Crown Willamette Paper Co.

Merchants and Manufacturers Hold Joint Meeting

One of the most interesting sessions of the Del Monte convention was the Merchants' and Manufacturers' meeting held each year and attended by both the members of the paper trade and the visiting mill men. H. L. Zellerbach, president of the Pacific States Paper Trade Association, handled the gavel.

"We may be counting our pennies a little closer but at the same time we are doing the same things we have been doing for the past 15 years, so under the circumstances I think we are all quite fortunate and we have a great deal to be thankful for," President Zellerbach said in his opening remarks. "One of the things we can all be thankful for is that we are here this year and enjoying ourselves and getting better acquainted and trying to find out what we can do to improve this

great paper industry of ours, because in the final analysis this industry is our life and living and our happiness or it is our misfortune. I personally believe that we will get out of the present conditions by working and co-operating and we want to make these two words, working and co-operating, the keynote of this meeting.

"I do not think that we on the coast have gotten the full effect of the disaster that has been felt in the east and over the rest of the world. I think we have been fortunate and we are doubly fortunate because of the fine type of men who are conducting our industry. There is understanding and good, sound sense on our industry, and reasoning."

Pilz Urges Greater Cooperation

President Zellerbach first introduced William J. Pilz, general manager of the Everett Pulp & Paper Company. Mr. Pilz urged greater self-discipline for the paper industry as preferable to governmental restrictions.

"At no time for a number of years past has there been greater need for co-operation thru association work than at present. Everyone agrees on the benefits accruing to each individual member of an association. During the past years when business was more plentiful than it is today, associations got along very nicely, but now under present conditions, there is much greater need for co-operative constructive work than before.

"We are hearing a good deal of complaint about the restrictions imposed by federal laws which were passed during the last twenty-five years. Couldn't an honest effort to work co-operatively go a long way to overcome some of the handicaps of these laws?

"In time there will be legal changes, but legislation works slowly, and a good many things could be done now under the present laws by closer individual co-operation which would help to improve conditions.

"We are all interested in better conditions, as it means advantages to all of us, and we should be willing to do our part to help bring this improvement about.

Business Needs No Dictators

"Some industries are feeling the need of a dictator in business to help conditions, and are endeavoring to accomplish results in this way. This, it seems to me, is a sign of weakness, and shows lack of harmony among the concerns interested. The idea of a dictator is repugnant to the average business man, and need not be entertained if the executives involved are willing to go half way and meet each other on common ground. The present chaotic condition in many lines of business must certainly be considered a confession of failure on the part of some of the executives involved. It must be improved, or in lieu of the dictator now suggested, business may be forced to face a dictatorship of governmental bureaus not of their own choosing, which would be even less desirable.

"The men who are holding executive positions at this time have a tremendous responsibility resting upon them. They have an obligation to their customers, their employees and to their stockholders, and all three will benefit by closer co-operation.

"At no time has there been a greater demand for executive ability, careful analysis of facts and clear thinking than at present.

Depreciated Currency a Problem

"It is hoped that needed legislation will be passed at this session of Congress, which will take care of a very serious matter affecting business, and that is the correction of the present evil of depreciated foreign currency. This, together with a reasonable and equitable revenue law, will remove some of the clouds of uncertainty now hovering over us, and give business a chance to go forward by restoring public confidence. However, this alone cannot cure the situation; the business man must still contribute his portion to the accomplishment.

"It is apparent from time to time that some sales executives are too prone to believe things they hear, without thoroly investigating the many irresponsible stories of their competitors' actions. These are the dog days for rumors and distorted facts, and a careful investigation and confirmation will frequently prevent a hasty and unwarranted action, which with careful analysis would have proven unnecessary.

H. L. ZELLERBACH
re-elected
President of the
Pacific States Paper
Trade Association

"The job ahead is certainly a large one, but with the exercise of a little more than ordinary patience and forebearance, I have confidence in the ability of those responsible to make satisfactory progress.

"Courage is needed, and the American business man has shown in the past his resourcefulness, and out of the present order he will rise to greater heights, and lead American people forward to that brighter day which we know is in store for us."

At the conclusion of Mr. Pilz' remarks, President Zellerbach said that for brevity and substance it could be compared to the Gettysburg Address of Lincoln.

Pagenstecher Likes the Coast

Another speaker at the Merchants' and Manufacturers' meeting was Felix Pagenstecher, president of the Hawley Pulp and Paper Co. President Zellerbach introduced him as one of the babies on the coast in the manufacturing industry of the west and said he came west with a high record of service with the Bryant Paper Co.

Mr. Pagenstecher said he thot the joint meeting was a wonderful event and the coast a wonderful place in which to live and work. "I am not presumptuous enough to come out here with any idea that I know anything that you men do not know about running a paper business," he continued. "The things that I have seen and heard on the coast give me the impression that you know a lot more about the business than people in other parts of the country. Maybe I am here on a mission; I have been in contact with the wrong way to do business in the paper industry for a long time, and therefore I know the wrong way and maybe I can help you from falling into those ways.

Impressed by Cooperation

"I am impressed with the co-operation shown between the merchant and the manufacturer; it is much closer on the coast than in other parts of the country. Be-

1932 OFFICERS
PACIFIC STATES PAPER TRADE ASSOCIATION

President
Harold L. Zellerbach, Zellerbach Paper Company, San Francisco

Executive Vice-President
Arthur W. Towne, Blake, Moffitt & Towne, San Francisco

Vice-Presidents
Frank E. Jeffries, Tacoma Paper & Stationery Company, Tacoma
C. H. Beckwith, Carter, Rice & Company, San Francisco
M. B. Olmsted, Zellerbach Paper Company, Los Angeles
T. A. O'Keefe, Pacific Coast Paper Co., San Francisco

Secretary-Treasurer
H. Arthur Dunn, San Francisco

cause you on the coast are more or less isolated from the rest of the country you can see much clearer how to help one another. I think the United States is going to lead the world back to prosperity and one way out here on the coast that we can help is to protect our home industries. The coast has been doing this and the rest of the country is finding out about it. We must protect our markets against the raids of those who live in countries with depreciated currencies. I think that if we can do this, our country will be a real factor in leading the world back to prosperity. As a matter of fact, if I had my own way about it, the first thing I would do would be to try to add to the revenues of the country by repealing the Volstead law and the next thing would be to put on duties against the raiding of our markets."

President Zellerbach called on M. R. Higgins, introducing him as his associate, helpmate and teacher. Mr. Higgins, who served a number of terms as president of the association, said that from the way President Zellerbach had conducted the meeting, he was proud to have him called his teacher.

"I want to say to you," Mr. Higgins declared, "that the meeting of the merchants today was the best we ever held. I believe we have gone along in better spirit, realizing more than we ever did that we have a task to perform, and that we have duties that are being forced upon us. I never have seen a spirit of co-operation quite so well expressed."

GOLF TOURNEY RESULTS—WINNERS, PRIZES AND DONORS

GENTLEMEN:

CLASS A—Winner, Earl Van Pool, silver coffee set donated by the Pacific States Paper Trade Association.
Runner-up: W. E. Taverner, silver pitcher donated by the Everett Pulp and Paper Co.

CLASS B—Winner, Frank E. Jeffries, silver cup donated by by the Western Waxed Paper Co.
Runner-up: J. Y. Baruh, bowls donated by the Crown Willamette Paper Co.

GENTLEMEN'S APPROACHING AND PUTTING CONTEST—Winner, Andrew Christ, Jr., bowls donated by the Inland Empire Paper Co.

BLIND BOGEY—Class A: Winner, Arthur W. Towne, cake dish donated by the Graham Paper Co.
Class B: Winner, M. R. Higgins, dish donated by the Pacific Coast Paper Co. Div.

LADIES

WINNER—Mrs. Thomas McLaren, silver cake dish donated by George LaMonte & Son.

RUNNER-UP—Mrs. A. H. Meadowcroft, clock donated by The Paterson Parchment Paper Co.

PUTTING CONTEST—Winner, Mrs. Andrew Christ, Jr., dishes donated by the Hawley Pulp and Paper Co.
Runner-up: Mrs. R. A. McDonald, dishes donated by the Hawley Pulp and Paper Co.

BLIND BOGEY—Winner: Mrs. F. C. Stratford, silver set, donated by the Grays Harbor Pulp and Paper Co.

MIXED TWO-BALL FOURSOME—Winners, Mrs. A. B. Saroni and W. E. Taverner, cups and saucers, donated by the Columbia River Paper Mills.
Runner-ups: Mrs. G. J. Ticoulat and Andrew Christ, Jr., silver cups, donated by Fibreboard Products.

The golf committee consisted of Augustus Johnson, chairman; M. M. Baruh, Andrew Christ, Jr., H. E. Goedje and J. R. Millar.

In the gentlemen's blind bogey, Class A., there were five tied at 75—W. J. Gray, A. W. Towne, Fred L. McClellan, W. J. Pilz and W. D. McWaters—so to settle upon the winner, Chairman Gus Johnson of the golf committee had the five putt it out on mats at the convention dinner dance and golf banquet Saturday evening. Towne won the indoor putting contest and received the award.

THOSE WHO ATTENDED
PACIFIC STATES PAPER TRADE ASSOCIATION

LOS ANGELES—
Blake, Moffitt & Towne, F. M. Couch; Taverner & Fricke, W. E. Taverner and C. H. Fricke; Zellerbach Paper Company, M. B. Olmsted.

SAN FRANCISCO—
Blake, Moffitt & Towne, O. W. Mielke and Arthur W. Towne; Bonestell & Company, Charles Pritchard; Carter, Rice & Company, C. H. Beckwith; General Paper Company, W. B. Reynolds; Pacific Coast Paper Company, T. A. O'Keefe; Zellerbach Paper Company, L. A. Colton, H. L. Zellerbach, F. C. Stratford, I. Zellerbach and M. R. Higgins.

PORTLAND—
Zellerbach Paper Company, W. D. McWaters.

TACOMA—
Tacoma Paper & Stationery Company, Frank E. Jeffries.

SEATTLE—
Zellerbach Paper Company, A. W. Akers.

SECRETARIES—
A. Arthur Dunn, San Francisco and J. R. Coffman, Los Angeles.

GUESTS—
Sam Abrams of the United States Paper Company, Los Angeles, and Donald Ingram and W. J. Green of the Ingram Paper Company, Los Angeles; M. M. Baruh of the Englander Dray & Warehouse Company, San Francisco.

MANUFACTURERS IN ATTENDANCE

A. P. W. PAPER CO., C. J. Allair, San Francisco.
AMERICAN WRITING PAPER CO., W. J. McCormick, San Francisco.
BROWN CO., Earl Van Pool, San Francisco.
COLUMBIA RIVER PAPER MILLS, H. Ruweler, San Francisco.
CROWN WILLAMETTE PAPER CO., G. J. Ticoulat, R. S. McDonald and Thomas McLaren, San Francisco.
EVERETT PULP AND PAPER CO., William Howarth, J. L. Murray and W. J. Pilz, Everett and Augustus Johnson, San Francisco.
FOX RIVER PAPER CO., Smith McLandress, Appleton, Wisconsin.
GRAHAM PAPER CO., C. E. Swick, San Francisco.
GRAYS HARBOR CORPORATION — J. F. Wuenschel, Hoquiam, and B. P. Jaggard, San Francisco.
HAWLEY PULP AND PAPER CO., Felix Pagenstecher, George W. Houck and Eugene Singer, Oregon City; Lloyd Riches, San Francisco, and W. L. Brinker, Los Angeles.
INLAND EMPIRE PAPER CO., W. A. Brazeau, Spokane.
GEO. LA MONTE & SON, V. N. Savale, San Francisco.
NORTHWEST PAPER CO., C. P. Sheldon, San Francisco.
OREGON PULP AND PAPER CO., Bruce Galloway, San Francisco.
THE PACIFIC SAFETY PAPER MILLS, Jack Cote, Los Angeles.
THE PATERSON PARCHMENT PAPER CO., W. J. Gray, San Francisco.
WESTERN PAPER CONVERTING CO., Arthur H. Colton, San Francisco.
WESTERN WAXED PAPER CO., of California, Andrew Christ, Jr., Oakland.
Fred L. McClellan, formerly of the McClellan Paper Co., Minneapolis, Minn.

Denver News

New price lists have been issued by the Butler Paper Company and the Carter Rice and Carpenter Paper Company in Denver. The changed prices went into effect May 1.

* * *

The many uses of the new Nurex products, tapping compound and cellophane, were shown at a demonstration held in the offices of the Carter, Rice and Carpenter Paper Company in Denver on April 30. The company is distributor for Nurex products in the Rocky Mountain territory.

* * *

The Carter, Rice and Carpenter Paper Company reports fine showing in the sale of menu covers, the manufacture of which they have recently undertaken. The holders are sold to printers who are now able to go out after the hotel and restaurant trade and reap the profits for so long have gone to transient salesmen.

* * *

Paul Butler, president and general manager of the Butler Paper Company, stopped off in Denver recently on his return to Chicago after a month vacation spent on the Pacific Coast.

* * *

Anent business conditions in Denver the remarks of a wholesaler should lead to a more sanguine interpretation then could be taken for several months. He stated that "business has stopped falling". If such be the case it is reasonable to presume that the bottom has been reached and from now on an upward climb is in prospect. He pointed out an increase in the sale of fine papers, an indication that the printing trade also is looking up. Other dealers also noted a slight upturn in fine papers. Coarse papers should follow along in due time.

* * *

Denver courts are to hear two interesting cases in the near future. A paper manufacturing company in that city has filed a cross-complaint in a suit to collect for supplies furnished. The cross-complaint alleges that the waste paper firm delivered everything from tin cans to rocks in an order of mixed paper and further alleges an eighty-four day shutdown to clean up and repair damage done to machinery by the "mixed paper". The counter suit involve $114,823, four times the amount asked by the waste paper firm.

Klinker Transferred to Seattle

William Klinker, who until recently was assistant sales manager of Zellerbach Paper Company in Portland, has been appointed sales manager of the Seattle branch. The office of assistant sales manager was abolished a short time ago and until his promotion effective May 1, Mr. Klinker served as outside salesman. He has been with the firm some 25 years or more.

Roy Featheringill of the Seattle branch has been transferred to Portland to replace Mr. Klinker.

New Water Rates on Eastbound Paper

Effective May 2, 1932, the Luckenbach Steamship Company advises, Item 1020 in the Federal Barge Line Tariff 60-F has been authorized amended by inclusion of "paper toweling and tissue, in jumbo rolls 20 inches and over in diameter, for remanufacture."

The North Atlantic Eastbound minimum rate List No. 1, effective April 20, 1932, authorized a rate on paper toweling and tissue in jumbo rolls 20 inches or over in diameter, for remanufacture, of 60c per 100 lbs., in minimum lots of 60,000 lbs.

Mielke Feted on Leaving Portland

Otto W. Mielke, newly appointed general manager of Blake, Moffitt & Towne, and president of the Northwest division of the firm, was feted as have been few Portlanders upon the eve of his departure to take up his new duties in San Francisco. One hundred and thirty business and professional men gathered at the Benson Hotel April 18 for a testimonial dinner in his honor. The Portland newspapers besides carrying numerous news stories in connection with his promotion devoted editorial space to lauding him as a public-spirited citizen and wishing him well in his new capacity.

At the banquet W. D. McWaters, manager of Zellerbach Paper Company, spoke as a business competitor and personal friend of Mr. Mielke and praised his faithful efforts to build up the paper trade. Mayor George L. Baker, L. W. Hartman, president of the Portland Chamber of Commerce and others spoke. Among the many telegrams received were messages from Governor Julius L. Meier of Oregon, Governor Rolph of California, Mayor Rossi of San Francisco, James K. Moffitt of Blake, Moffitt & Towne, I. Zellerbach of Crown Zellerbach Corporation and A. B. Galloway.

Mr. Mielke left Portland April 30. He said that he had some changes to make in the south, but was not yet ready to announce them.

Shorno Succeeds Mielke at Portland

Clinton L. Shorno, formerly vice president and sales-manager of the Portland division of Blake, Moffitt & Towne, wholesale paper dealers, has been appointed general manager, succeeding Otto W. Mielke, who has gone to San Francisco to become general manager of the entire activities of the firm.

The Portland office supervises branches in Boise, Salem and Medford and has warehouse stocks in Klamath Falls, Eugene, La Grande and Walla Walla. Mr. Shorno, the new Portland manager of the firm, is a member of the trade and commerce department of the Portland Chamber of Commerce and is also a member of the Columbia and Multnomah clubs.

Freight Rates Reduced

Effective May 10 carload rail rates on paper commodities, such as newsprint, wrapping paper, bags, fruit wrap, etc., moving from Oregon City, West Linn, Camas and St. Helens to Washington and Idaho points from Pasco and Kennewick east were reduced to meet truck competition. The railroads have been losing considerable tonnage to the auto freight lines and hope by this reduction, published jointly in a North Pacific Freight Bureau tariff, to bring back some of the business.

Some objection is being raised among paper shippers to the increase in minimums that accompanied the decrease in rates. Heretofore most of the items moved at a 40,000-pound minimum; now most will move at 50,000 pounds. This, it is said, does not work to the advantage of the mills.

The rates from Salem and Albany were not reduced. In the past these two points have paid a differential of three cents over Oregon City. The reduction will increase the spread.

The paper mills have also been given a reduction by the intercoastal steamer lines. The United States Intercoastal Conference has chopped the eastbound rates on newsprint, wrapping paper and bags from 55 cents per 100 pounds on a 24,000-pound minimum and 50 cents on a 36,000-pound minimum to 50 cents on the former and 45 cents on the latter.

Spaulding Refinancing Delayed

Recently a monkey-wrench was tossed into the machinery of refinancing the Spaulding Pulp & Paper Company, which suspended operations early this year owing over $200,000. Essential to funding of the debts, was the raising of at least $50,000 working capital thru the sale of a proposed bond issue. Subscriptions for a large part of that amount were pledged, but before they were signed, and before subscriptions could be obtained for the full amount, legal proceedings were instituted on behalf of creditors with claims aggregating $11,902.

To meet this serious turn of affairs, which tied up temporarily the only funds available for paying watchmen, and providing electric power and fuel to maintain fire protection, the board of directors called a creditors' meeting in Portland for April 18. At this meeting a committee of five creditors' representatives was appointed to cause a survey and audit to be made and to formulate plans for reorganization, reporting its findings and recommendations on or before June 30.

Personnel of the committee was: Fentress Hill, coast correspondent of Detroit Trust Company, and chairman of the board of directors of Chas. K. Spaulding Logging Company, representing a claim of the latter for $46,477; T. B. Sumner, president of Sumner Iorn Works, representing a claim of $10,147; McDannell Brown, attorney for T. C. Lovett, one of the attching creditors, representing a claim of $1,591; R. T. Moore, of Yamhill Electric Company, representing claim of $11,882, and O. M. Allison, attorney for E. Fred and Susan Pittock, representing a claim of $89,108. Mr. Allison is also secretary of the Spaulding Pulp & Paper Company, in which the Pittocks are heavy stockholders.

The committee, thru its chairman, Fentress Hill, has called on all the creditors to sign an agreement to refrain from instituting any action against the company for collection of their claims before the committee reports its findings and recommendations, not later than June 30. The attaching creditors have agreed to release their attachments if the other creditors will execute the agreement. They have already released up to $1,500 to finance the survey and audit and preparation of a reorganization plan and $3,200 to meet the other expenses for watchmen, power, fuel, etc.

As of January 1, 1932, the company's actual investment in real estate, plant and equipment, practically free of encumbrances, total $913,179.09 before depreciation. Total debts, beyond available cash and receivables, total about $250,000.

Swedish Pulp Industry Tied Up By Strike

A strike was declared, effective April 11, by 17,000 woodpulp workers of Sweden following their refusal to accept the wage proposal of the Mediation Commission, according to a radiogram received in the Commerce Department Saturday from Trade Commissioner Basil Dahl, Stockholm. This strike will seriously affect the woodpulp industry of Sweden.

The dispute between mill owners and workers centers around the proposal of the former to reduce hourly wages by 6% and piece work rates by 12%.

Strikes that became effective in March closed a number of mills, and the one that is effective on April 11 will close virtually all the remaining woodpulp mills in Sweden and may result in serious curtailment of pulp and paper manufacturing if the strike continues, the cable indicated.

The general strike of the Swedish pulp mill workers is not expected to materially affect the market because of stocks accumulated during the winter.

Waiting for Better Business

"We're just coasting along and waiting for that promised improvement in markets," said J. J. Herb, president of Westminster Paper Company, New Westminster, B. C., when asked about spring prospects.

"We might as well admit that business has been pretty quiet," said Mr. Herb. "Demand from export markets is low and the Canadian prairies have been buying only in small volume."

Westminster Paper Company manufactures a wide variety of paper products, such as fruit wraps, towels, tissues.

Plans for supplying fruit wraps for the Okanogan orchard industry will be discussed in a few weeks, Mr. Herb says.

The Okanogan expects to have one of the biggest apple crops on record and other fruits will also yield well. As a result of the new British tariff preference, it is expected that practically the entire surplus will be disposed of in the United Kingdom, which means that a larger market than usual for fruit wraps may materialize.

National Paper Box Company, Vancouver, of which R. E. Barker is managing director, may also profit from this movement. Last year experiments were made with packing apples in small paper cartons and this may be developed on a larger scale this year.

Many of the British Columbia paper products companies regard the Canadian prairies as their most important sales field, and the reports of a large wheat crop there are taken as an optimistic sign. If the farmers are prosperous the demand for paper products will probably improve.

Depreciated Exchange—A Help To European Exports

The advantage derived by countries which have suspended gold payments is their export trade is aptly illustrated by exports of vegetable parchment, greaseproof, glassine, and similar papers during the month of January as compared with the corresponding month in 1931. Sweden more than doubled its shipments, exporting 4,631,865 pounds as against 1,970,912 pounds a year ago; Norwegian shipments of 3,606,726 pounds show a gain of only 10%: but Finnish shipments of 92,717 pounds were nearly four times those of January, 1931. On the other hand, exports of these papers from the Netherlands declined by 57%, from the United States by 35%, and from Germany by 23%.

No Action on Proposed Mill

Fred A. Douty, president of Multnomah Lumber & Box Company, Portland, says that business is too quiet for anything to be done at present on Multnomah's proposed erection of a plant for manufacturing fibreboard for boxes. Last year Mr. Douty had expected to be able to make definite announcements by this time as to plans for construction of the mill.

Various other pulp and paper projects in the vicinity of Portland are quiescent likewise, awaiting an upturn in business. If and when it comes, it is expected that a number of them will blossom forth all at once.

Bellingham Mill Wins Lower Water Rate

The water board of the City of Bellingham, Washington, has voted a small reduction in water rates to the Pacific Coast Paper Mills of that city. The new rate is 1½c per 100 cubic feet.

The mill has a daily capacity of about 20 tons of high grade bathroom tissues and kindred products. Paul Herb is vice president and manager.

New Types
New Models
New Machines

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

New Dealers
New Branches
Appointments

Foxboro Announces The Liquid Level Stabilog

The Liquid Level Stabilog—an unusual instrument designed especially for the continuous process industries—is being introduced at this time by the Foxboro Company of Foxboro, Mass.

With the announcement of this instrument, the Foxboro Company states that one of the most unusual process control problems has at last been successfully solved. The problem referred to is the difficulty with which satisfactory control is obtained at critical points in a process because of the surging flows caused by the use of incorrect types of level controllers.

The Foxboro Liquid Level Stabilog is designed to positively prevent these surges in flow. This instrument is made in two types: throttling and averaging. These two types can take care of every level problem.

The throttling type is used in processes where it is desirable to hold a close level and yet have a smooth throttling valve action that will not set up surges in the controlled flow. The averaging type level Stabilog allows the level to vary within safe limits but holds the outflow as nearly uniform as possible. In this case the outflow averages out the variations in the inflow.

New E. D. Jones & Sons Company Appointment

E. D. Jones & Sons Company, Pittsfield, Massachusetts, announce the consummation of arrangements with Canadian Allis-Chalmers, Limited, Toronto, Ont., for the latter to manufacture and sell the well known Jones Paper Mill Products to Canadian customers.

With this new representation it has been arranged to coordinate the work and interchange of information between the respective engineering and manufacturing departments so as to insure that the Jones "Made in Canada" products will compare exactly with the usual, recognized high standard quality of workmanship, materials and design of Jones machinery.

All inquiries directed to Canadian Allis-Chalmers, Ltd., Toronto, Ont., or to E. D. Jones & Sons Company, Pittsfield, Mass., will receive prompt attention.

E. D. Jones Marketing Liebeck Fibrators

Renson Engineering, Inc., of 120 Broadway, New York, licensees under Scott Paper Company's patent covering the Liebeck Fibrator for defibring and disintegrating pulp stocks, announce that arrangements have been completed with E. D. Jones & Sons Company, of Pittsfield, Mass., whereby the Jones Company have an exclusive license to manufacture and sell Liebeck Fibrators in the United States, its territorial possessions and Canada.

The Liebeck Fibrator is said to represent a significant advance in the breaking up of baled pulp (including frozen bales), whether sulphite, sulphate, soda or ground wood.

E. D. Jones & Sons Company will be glad to furnish full information and illustrations regarding design, operation and advantages of the Liebeck Fibrator to any party interested.

President of Downingtown Taken By Death

Guyon Miller, president of Downingtown Manufacturing Company, died on May 5. Mr. Miller was 76 years old and more than fifty years ago, founded the Downingtown Manufacturing Company and was continuously identified with the company until his death. All these years, he was closely identified with the paper industry, both as a manufacturer of paper mill machinery—inventor and stockholder in mill enterprises.

Big Rubber Covered Rolls

It is interesting to note the trend toward big rubber covered rolls in the paper industry. For example, the big newsprint machine at the Great Lakes Paper Company at Fort William, carries an American Wringer Company Tensilastic rubber press roll with a 264-inch face and 30-inch finished diameter. The felt carrying rolls on this same machine are 317-inch face, 17-inch finished diameter.

In the Champion Fibre Company mill at Canton, N. C., are two Tensilastic main press rolls measuring 241-inch face, 32-inch finished diameter. The shipping weight of these two rolls was 45,000 pounds. In the American Wringer Company plant at Woonsocket, R. I., an additional press roll of the same size is being held as a spare for this same machine.

A Tensilastic rubber press roll at the Southern Advance Bag and Paper Company mill, Hodge, La., measures 238-inch face, 30-inch finished diameter.

Let Cord Wood Contract for Port Angeles

Pulpwood contracts to the extent of 5,000 cords have been let recently to cutters in the Elk Creek and Bogachiel regions of the Olympic Peninsula by Chris Morganroth, an agent for the Washington Pulp & Paper Corporation, operating a 300-ton news mill at Port Angeles, Washington. Carl Buschner will handle a large output under contract to the company from Elk Creek, while Nels Undi and others will cut in the Bogachiel section.

The letting of the new contracts in the industry at this time has been the means of putting many men to work and the industry as a whole has somewhat of a bright outlook. Reserve supplies at the mills in Port Angeles have dwindled, it is reported, and wood cutting in the west end will continue to be one of the major sources of revenue for the town and many employees connected with the operations for some time to come.

Western Hemlock Pulp Stand Sold

A tract containing between 5,000 and 6,000 cords of excellent Western Hemlock pulp timber, situated on the beach road west of Hoquiam, Washington, was purchased from the E. K. Wood Lumber Company, of Hoquiam, by Harry Traynor of the same city late in March. Mr. Traynor will take out the timber for the Grays Harbor Pulp & Paper Company. Operations at the beach camp were begun immediately.

MILL MODERNIZATION MUST INCLUDE • • •

proper ventilation

For most mills a definite modernization program must soon be carried out to fit them for the new competitive conditions that have developed during the past few years. The modernization movement is already under way in some sections of the industry.

In making your plans, give full consideration to the part that proper heating and ventilating plays in the efficiency and economy of machine operation. The newer mills that have established the new standards of operating efficiency are equipped with the necessary apparatus to insure proper heating and ventilating. It should not be neglected in the modernization of older mills.

Ross engineers are best qualified to help you determine heating, ventilating and conditioning requirements for your particular plant and equipment. Use the reliable Ross service.

Ross Briner Economizer (Licensed under patents of E. A. Briner and John E. Alexander).
Ross-Grewin High Pressure Vapor Removal System.
Ross Grinder Exhaust System.
Ross-Wagner Recovery Furnaces.
Ross Vapor Absorption System.
Ross Paper Machine Hoods.
Ross Machine Room Systems.
Ross Drying & Conditioning Systems.
Ross Unit Heaters.
Trim Conveying Systems.
Motor Cooling.
Calender Cooling.
Fans—Blowers—Filters.

J. O. ROSS ENGINEERING CORPORATION

201 No. Wells St. CHICAGO
Main Office—122 E. 42nd Street NEW YORK
414 Lewis Building PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LTD.
NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

When writing to J. O. ROSS ENGR. CORP. *please mention* PACIFIC PULP & PAPER INDUSTRY

S·A·F·E·T·Y FIRST, LAST ALWAYS

The Best Safety Device Known Is a Careful Man

PULP AND PAPER MILLS IN THE STATE OF WASHINGTON

Statement of Accident Experience for March, 1932

Company—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Grays Harbor Pulp & Paper Co., Hoquiam	57,543	0	0	0	0	1
Fibreboard Products Inc., Sumner	22,820	0	0	16	.701	2
Crown Willamette Paper Co., Camas	208,496	1	4.8	31	.149	3
Inland Empire Paper Co., Millwood	48,650	1	20.6	26	.534	4
National Paper Products Co., Port Townsend	66,293	2	30.2	122	1.840	5
Longview Fibre Co., Longview	94,649	3	31.7	25	.264	6
Everett Pulp & Paper Co., Everett	61,752	2	32.4	17	.275	7
Puget Sound Pulp & Timber Co., Bellingham	28,168	1	35.5	5	.177	8
Puget Sound Pulp & Timber Co., Everett	48,412	2	41.3	23	.475	9
Rainier Pulp & Paper Co., Shelton	54,065	3	55.5	46	.851	10
Weyerhaeuser Timber Co., Longview	45,936	4	87.7	24	.784	11
Washington Pulp & Paper Corp., Port Angeles	69,520	8	115.1	120	1.726	12
Pacific Straw Paper & Board Co., Longview	18,262	3	164.3	42	2.300	13

The following mills did not report: Columbia River Paper Mills; Fibreboard Products Inc., Port Angeles; Pacific Coast Paper Mills.
The following plants not in operation: Everett Pulp & Paper Co. (West Tacoma Plant); Tumwater Paper Mills; St. Regis Kraft Co.; Puget Sound Pulp & Timber Co., Anacortes, and Shaffer Box Co.

Coast Pulp Mills Win Lower Rail Rates East

Pulp markets in the Middle West states are now from $.70 to $2.00 per ton nearer for the Pacific Coast mills. The Western mills presented their case to the railroads and won the concession as an aid in combatting the difficult foreign competition which has to be met in this same market. The revised schedules are shown below:

Groups—		Per CWT. Old Rate	New Rate
D-E-F-G-H-J	Illinois-Wisconsin	$.60	$.55
	Michigan-Indiana	.65	.60
C, C-1	Ohio, except Chillicothe	.65	.60
B	Chillicothe, Ohio	.70	.60
F	Minnesota	.58½	.55

The date that these rates went into effect was April 9. Of course, to all these rates is now added the surcharge of 40c per ton, or 2c per CWT, making the rates 57c, 62c, etc.

The reduction of 5c per CWT means $1.00 per ton to shippers, the reduction of 10c per CWT means $2.00 per ton to shippers, and the reduction of 3½c means 70c.

These reductions were granted under Docket No. 12593 and of course, were granted by territories, as shown as by the groups above.

The estimated savings to Coast mills is not known because no data are available on how much pulp is shipped all rail from the various mills.

Longview Board Mill Gets China Order

The Pacific Straw Paper & Board Company, operating a 40-ton board mill at Longview, Washington, recently received an order for 1,200 tons of board to be shipped to British-American Tobacco Company at Shanghai. The shipment is in excess of 80 carloads. This is reported to be one of several large foreign orders placed by the Longview mill recently.

Leadbetter Companies Report Earnings

Two Leadbetter companies, the Oregon Pulp & Paper Company at Salem, Oregon, and the Columbia River Paper Mills at Vancouver, Washington, showed decreased earnings for 1931 as compared with 1930. In each respective case the net income after all charges was $85,733 for 1931 as against $197,931 for 1930, and $51,134 for 1931 as against $130,435 for 1930.

The Salem mill earned its bond interest 2.30 times after all charges in 1931, while Columbia River Paper Mills earned this requirement 2.02 times.

The California-Oregon Paper Mills, operating on fruit tissue and other wrapping papers in Los Angeles, turned a 1930 deficit of $129,176 into a 1931 profit of $410.

Oregon Pulp & Paper Company earnings touched their high point in 1929, when gross operating profit soared to $514,920. Columbia River Paper Mills has never come close to the 775,652 gross operating profit which 1928 produced. No particular reason other than curtailed buying of paper products and falling commodity prices generally is assigned for this unfavorable but inevitable curve in earnings of the Leadbetter companies.

Oregon Pulp on March 1 omitted the quarterly dividend of 2% on its 8% preferred stock, altho net income for the year amply covered the preferred requirements. Reason for the dividend omission, which is cumulative, was the $90,000 bond maturity on May 1. This was paid.

Portland Bankers Visit West Linn Mill

A delegation of 100 bank employes affiliated with the American Institute of Banking, Portland, were taken on a tour through the Crown-Willamette Paper Company's mills at West Linn on May 7. Officers of the Bank of Oregon City made arrangements for the visit and millmen acted as guides.

After going through the plants Robert Young, chemical engineer at the paper mill, gave an interesting talk on paper manufacturing.

FOR YOUR MOST DISCRIMINATING TRADE

DU PONT ANTHRAQUINONE BLUE B– *gives bright, distinctive fast-to-light bond paper shades with minimum two-sidedness.*

•

DU PONT ANTHRAQUINONE BLUE B is adapted for use in all qualities of bond papers. It possesses the necessary brilliance required to produce the distinctive fast-to-light green and blue shades. Du Pont ANTHRAQUINONE BLUE B also gives minimum two-sidedness. Our technical department is always at your service to help solve your paper dyestuffs problems.

DU PONT DYES FOR PAPER

E. I. DU PONT DE NEMOURS & CO., INC.
Dyestuffs Division, Wilmington, Delaware

SALES OFFICES: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries, Ltd., Dyestuffs Division, Canada Cement Building, Montreal, Canada

McMaster Discusses Economies

The present depressed condition of markets will have one important and permanent advantage to the pulp and paper industry and that is the establishment of the business on a sounder economic footing, stated A. E. McMaster, general manager of Powell River Company, in discussing the outlook following the annual meeting of his company in Vancouver, B. C., recently.

Mr. McMaster pointed out that the general slump in business had compelled his company as well as all other units in the industry to effect far-reaching economies, and that this action, resulting in the elimination of many unnecessary sources of expense, would inevitably lead to a healthier condition when normal activity returned.

"In many cases we have jettisoned items in our budget which a few years ago we would have regarded as indispensable," said Mr. McMaster. "Yet we have found out in practice that this compulsory ruthlessness has been a good thing. It has proved that we could get along just as well if not better without various burdens which when grouped together involved a very considerable expenditure. Many of these non-essential sources of expenditure, so far as our own company is concerned—and I know this to be the case with the majority of other companies in the pulp and paper business—have been dispensed with for good, and that will be to our permanent advantage. Apparently it needed a general readjustment of business such as the present depression has brought about to give us a valuable lesson in economy."

So far as the Powell River Company is concerned, however, few such lessons were needed. Its policy has always been a conservative one and it has been able to weather the industrial storm of the last few years in probably as sound a condition as any company operating in the industry. Indeed, the Powell River Company has revealed such strength that many drastic economies that proved imperative with some corporations have not so far been resorted to. The company recently reduced wages, an expedient adopted months ago by most other companies, but it has maintained a busy five-day week.

Summarizing the market situation, Mr. McMaster was unable to report any definite signs of improvement. The consumption of newsprint, he said, continued downward and newsprint was apparently feeling in full many of the effects of the slump affecting business everywhere.

"We had hoped that there would be a betterment in market conditions as compared with last year, but this has so far not materialized," said Mr. McMaster. "All lines of business have suffered and as a result advertising has fallen off, which means smaller newspapers and less demand for newsprint. Never before have we had a clearer indication of the fact that the state of the newsprint industry is a true barometer of general business."

Mr. McMaster said that newsprint prices were now at a figure allowing the least possible margin for operation even in consideration of the many economies effected by producers.

"Sweeping curtailment of costs has been carried out by many eastern Canadian mills and it is possible that they will be compelled to go a step further," said Mr. McMaster. "The prospect of further mergers in the eastern field is a healthy sign as consolidation of the stronger units and elimination of the weaker ones cannot fail to improve the economic status of the industry as a whole. What is needed more than anything else now is stabilization, and that is the objective of the committee of bankers and business men that is now investigating the whole newsprint position in the eastern provinces."

Mr. McMaster said that Scandinavian competition remained one of the severest handicaps for development of the pulp and paper trade on the Pacific Coast.

"It is unfair competition because we cannot attempt to meet the Scandinavian prices unless we lower our standards of living to the Scandinavian level, and that would be intolerable," said Mr. McMaster. "In Canada and the United States we do not mind eliminating some of the luxuries to meet the requirements of the day, but we are not ready yet to lower the whole standard of our living. It would be unfortunate if Canadian imports to the United States suffered from the imposition of special tariffs, but I can sympathize with the United States in endeavoring to protect its own markets from exploitation by a country like Sweden, which now benefits from heavily depreciated currency."

Pulp Mill Water Shipments Large

Outbound water shipments for the Port of Grays Harbor, Washington, show pulp and paper products from the Grays Harbor Pulp & Paper Company's big plant in Hoquiam bulking large in the list. Thruout early 1932 a large portion of the shipping in Grays Harbor has carried burdens for the pulp mill.

Both pulp and finished paper are shipped while inbound tonnage includes pulp, limestone and pulp wood.

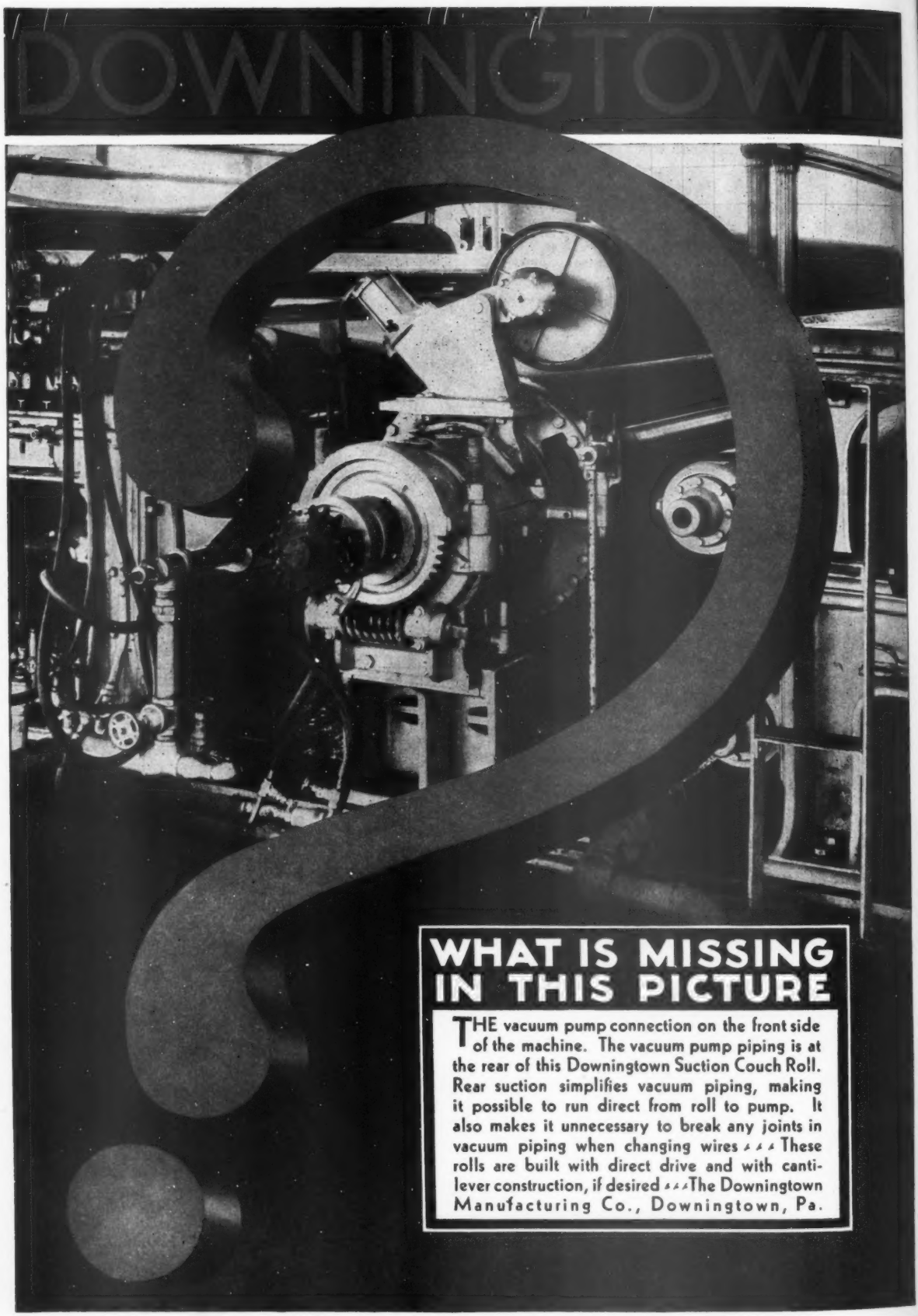
R. B. Wolf, manager of the Pulp Division, Weyerhaeuser Timber Company, Longview, Washington, was in the Eastern states early in May on a goodwill business trip.

- **PAPER**
- **SALESMAN**
- **AVAILABLE**

Experienced paper salesman wishes to make contact with a Pacific Coast paper mill as a direct representative operating on the Eastern market, including New England, New York, New Jersey and Pennsylvania.

Has sold both pulp and paper for a number of years and has good contact with jobbers and converters in the above territory. Young executive with the best of references to submit.

Box 120, Pacific Pulp & Paper Industry, 71 Columbia Street, Seattle, Washington.


DOWNINGTOWN
WHAT IS MISSING IN THIS PICTURE
THE vacuum pump connection on the front side of the machine. The vacuum pump piping is at the rear of this Downingtown Suction Couch Roll. Rear suction simplifies vacuum piping, making it possible to run direct from roll to pump. It also makes it unnecessary to break any joints in vacuum piping when changing wires ▲▲▲ These rolls are built with direct drive and with cantilever construction, if desired ▲▲▲ The Downingtown Manufacturing Co., Downingtown, Pa.

When writing DOWNINGTOWN MFG. CO., *please mention* PACIFIC PULP AND PAPER INDUSTRY.

News Print Production—March, 1932

The News Print Service Bureau's Bulletin No. 171, states that production in Canada during March 1932 amounted to 166,758 tons and shipments to 163,806 tons. Production in the United States was 100,034 tons and shipments 94,282 tons, making a total United States and Canadian news print production of 266,792 tons and shipments of 258,088 tons. During March, 21,072 tons of news print were made in Newfoundland and 934 tons in Mexico, so that the total North American production for the month amounted to 288,798 tons.

The Canadian mills produced 49,569 tons less in the first three months of 1932 than in the first three months of 1931, which was a decrease of 9%. The output in the United States was 9,837 tons or 3% less than for the first three months of 1931, in Newfoundland 6,308 tons or 9% less, and in Mexico 647 tons less, making a total decrease of 66,361 tons or 7%.

Stocks of news print paper at Canadian mills totalled 63,548 tons at the end of March and at United States mills 38,677 tons, making a combined total of 102,225 tons compared with 93,521 tons on February 29.

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundland	Mexico	Total
1932—March	166,758	100,034	21,072	934	288,798
Three months	490,330	281,438	65,994	3,213	840,975
1931—Three months	539,899	291,275	72,302	3,860	907,336
1930—Three months	604,559	349,780	67,940	4,858	1,027,137
1929—Three months	618,893	342,052	59,607	4,958	1,025,510
1928—Three months	573,307	353,509	54,561	3,999	985,376
1927—Three months	487,804	388,555	51,039	3,497	930,895
1926—Three months	429,444	415,591	40,886	3,076	888,997
1925—Three months	363,866	371,545	15,758	3,046	754,215

Paper and Bag Mill — Executive —

Successful record in reducing costs and improving quality. Fourteen years pulp, paper, and bag manufacturing experience as Mill manager, assistant manager, and assistant treasurer. College course Commerce and Business Administration. Age 39. Desires connection with progressive West Coast mill, and will consider any position having possibilities, mill or office.

Address reply, Box 121, Pacific Pulp & Paper Industry, 71 Columbia Street, Seattle, Wash.

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES BY COUNTRIES AND CUSTOMS DISTRICTS

January, 1932

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
(Figures Subject to Revision)

PULP WOODS

	Rough — Spruce		Rough — Other		Peeled — Spruce		Peeled — Other		Rossed — Spruce		Rossed — Other	
	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars	Cords	Dollars
Countries—												
Canada	2,635	18,125	.....	.....	11,667	108,469	1,556	12,801	447	5,059	.....	.....
Total	2,635	18,125	.....	.....	11,667	108,469	1,556	12,801	447	5,059	.....	.....

Total Imports og Pulpwood, January, 1932—16,305 cords; $144,454.

WOOD PULP

	Mechanically Ground Unbleached		Mechanically Ground Bleached		Chemical Unbleached Sulphite		Chemical Bleached Sulphite		Chemical Unbleached Sulphate		Chemical Bleached Sulphate		Soda Pulp, Unbleached and Bleached	
	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars	Tons	Dollars
COUNTRIES—														
Austria	.....	.....	.....	.....	.....	.....	1,094	42,943	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	.....	.....	.....	110	4,030	390	18,061	.....	.....	.....	.....	.....	.....
Estonia	.....	.....	.....	.....	277	10,196	.....	.....	.....	.....	.....	.....	.....	.....
Finland	508	13,780	373	8,787	7,262	273,149	1,759	74,849	6,011	194,249	112	6,285	.....	.....
France	.....	.....	19	543	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Germany	.....	.....	.....	.....	3,864	117,233	3,772	192,095	.....	.....	.....	.....	.....	.....
Norway	250	2,826	215	4,710	350	11,604	3,846	175,817	545	16,643	297	24,150	.....	.....
Sweden	731	8,867	65	1,677	69,541	2,583,193	7,959	331,090	54,657	1,672,263	150	5,006	.....	.....
Yugoslavia	.....	.....	.....	.....	396	10,742	.....	.....	96	2,777	.....	.....	.....	.....
Canada	13,320	274,845	.....	.....	6,284	235,961	11,869	657,947	1,107	47,709	1,259	115,211	277	11,958
Estonia	.....	.....	.....	.....	.....	.....	.....	.....	49	1,766	.....	.....	.....	.....
Total	14,809	300,318	672	15,717	88,084	3,246,108	30,689	1,492,802	62,465	1,935,407	1,818	150,652	277	11,958
CUSTOMS DISTRICTS—														
Maine and New Hampshire	1,636	43,566	373	8,787	7,398	311,130	6,339	307,851	9,804	289,079	.....	.....	.....	.....
Vermont	567	12,479	.....	.....	400	10,973	812	39,871	723	33,578	966	91,287	188	8,059
Massachusetts	.....	.....	65	1,677	15,648	582,948	3,401	160,931	12,689	398,784	382	25,456	.....	.....
Connecticut	.....	.....	.....	.....	.....	.....	.....	.....	591	20,046	.....	.....	.....	.....
St. Lawrence	718	15,758	.....	.....	171	7,648	606	32,588	25	1,929	22	2,137	26	1,295
Rochester	104	2,841	.....	.....	.....	.....	58	2,476	.....	.....	.....	.....	.....	.....
Buffalo	543	9,028	.....	.....	1,510	60,331	879	60,206	.....	.....	.....	.....	.....	.....
New York	51	1,569	50	903	16,815	665,997	3,070	134,482	8,917	279,969	127	7,156	.....	.....
Philadelphia	3,334	70,540	69	1,687	16,876	557,090	1,763	81,069	3,008	103,371	.....	.....	.....	.....
Maryland	100	2,858	115	2,663	23,861	869,451	4,047	190,998	9,507	293,350	50	2,829	.....	.....
Virginia	100	2,858	.....	.....	2,491	89,796	463	23,548	13,063	389,578	.....	.....	.....	.....
Mobile	.....	.....	.....	.....	31	944	.....	.....	.....	.....	.....	.....	.....	.....
New Orleans	.....	.....	.....	.....	401	15,725	2,362	89,166	2,618	76,862	.....	.....	.....	.....
Galveston	.....	.....	.....	.....	39	1,504	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	.....	.....	.....	.....	500	13,507	.....	.....	89	2,680	.....	.....	.....	.....
San Francisco	.....	.....	.....	.....	500	13,240	.....	.....	1,072	33,979	.....	.....	.....	.....
Washington	.....	.....	.....	.....	95	3,738	841	35,055	.....	.....	.....	.....	.....	.....
Dakota	283	5,205	.....	.....	.....	.....	136	6,366	359	12,202	.....	.....	.....	.....
Duluth and Superior	6,811	121,533	.....	.....	94	1,119	.....	.....	.....	.....	.....	.....	.....	.....
Michigan	562	12,083	.....	.....	1,254	40,967	5,912	328,195	.....	.....	271	21,787	63	2,604
Total	14,809	300,318	672	15,717	88,084	3,246,108	30,689	1,492,802	62,465	1,935,407	1,818	150,652	277	11,958

Total Imports, All Grades, of Wood Pulp, January, 1932—198,814 tons; $7,170,962.

Watch Your Bottom Press Rolls

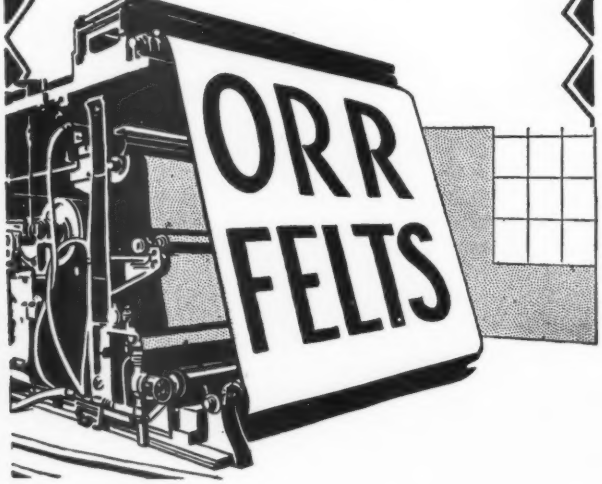
Keep an eye on your bottom press rolls. The condition of the rubber, the crown and the bearings all exert a direct influence on felt performance and felt life.

Watch your suction boxes for sharp edges. Round them off. Sharp edges, contacting the felt, cut the nap and rapidly wear it away. On cylinder molds check up on the bearings and on the crown.

ORR FELTS are made in one of the most modern plants in America, where the finest traditions known to the manufacture of felts for the paper industry are being successfully maintained.

Specify ORR FELTS. Check with us on your requirements and obtain the exact felt needed, regardless of what that may be. The line is complete.

The Orr Felt & Blanket Co.
Piqua, Ohio



Paper Makers Using Government Research Methods

A group of commercial permanent record papers recently tested by the Bureau of Standards gave evidence that paper manufacturers are applying the results of research on permanence qualities, as nine papers recently tested (which were of bond type and made from rag fibers by five different manufacturers), far exceeded the average quality previously found in such papers by the Bureau, it was announced recently by George K. Burgess, director.

The papers were exceedingly strong, the folding endurance ranging from 2,300 to 11,000, and the strength was stable, the retention of folding endurance under the heat test (exposure for 72 hours to 100 degrees C.) ranging from 75% to 100%. This excellent stability is attributed to the high cellulosic purity and the low contents of rosin and acid found in the papers, all of which are evidence of careful control of the paper making operations.

The purity of the cellulose is shown by the high content of alpha cellulose, 93% to 98%, and the low copper number, 0.33 to 0.83. When subjected to the heat test, the alpha cellulose did not decrease at all in four of the papers, these same papers did not gain in copper number while for all the papers the maximum loss in alpha cellulose was 1.7, and the maximum increase in copper number was 0.45. The rosin content was not more than 0.2% in four of the papers, and the most found was 1.8%. Two of the papers contained no acid and the maximum acidity was 0.05%. The average weight of the papers was 68 pounds (per 500 sheets, 25x40 inches), and they were all surface sized with animal glue.

Papers such as these, if stored under favorable conditions, should endure indefinitely.

Finnish Paper Exports Larger

Finnish paper exports have been larger in both quantity and value since the beginning of the year, according to a recent report from Consul John L. Bouchal, Helsingfors. The increase is attributed largely to the depreciation in the Finnish currency which has enabled exporters to complete more effectively in world markets than previously. Purchases by British importers in anticipation of a tariff on paper have also stimulated Finnish exports sales. The same holds true in regard to the increase in chemical pulp and groundwood shipments. The market for thin printings continues to be adversely affected by the situation in China.

Swedish newsprint production during the month of February totaled 23,234 metric tons (metric ton equals 2,205 pounds), an increase of 4,575 tons over the preceding month and of 7,978 tons of February, 1931.

Fire Damages Waste Paper Plant

Fire, believed to have been caused by a match in a batch of waste paper, swept through 500,000 pounds of baled waste paper stored at the Pacific Paper Materials Company plant, Fifteenth and Pettygrove Streets, Portland, April 26, doing about $5,000 damage. The paper was for the Pacific Straw Paper and Board Company, Longview. Manager Fred Schulze said that business would continue.

Swedish Pulp Strike

Workers in the leading Swedish wood pulp mills refused, April 8, the mediation commission's wage proposal, and a strike, effective April 11, was declared. Seventeen thousand workers are involved.

Cutting White Fir Cordwood in Salem

Contracts for supplying white fir cordwood for Oregon pulp mills have been let recently, one contract calling for 1,200 cords for the Oregon Pulp & Paper Company at Salem and another for 1,500 cords for Crown Willamette Paper Company's mill at Lebanon.

Sweden Increases Paper Exports to U. S.

Further in regard to Swedish paper imports to the United States, Sweden imported 5,030 tons in March, 1932, as against 2,646 tons in March, 1931. For the first three months of this year their total is 20,044 tons as against 14,756 tons for the same period last year. These figures are based on Commerce reports — in short tons.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Of Pacific Pulp & Paper Industry, published monthly—except in March, when publication is semi-monthly—at Seattle, Washington, for April 1, 1932.

State of Washington, County of King,—ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Lawrence K. Smith, who having been duly sworn according to law, deposes and says that he is the business manager of the Pacific Pulp & Paper Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Consolidated Publishing Co., 71 Columbia St., Seattle, Wash.
Editor, Lloyd E. Thorpe, 71 Columbia St., Seattle, Wash.
Managing editor (none).
Business manager, L. K. Smith, 71 Columbia St., Seattle, Wash.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)
Consolidated Publishing Co., 71 Columbia St., Seattle, Wash.
Miller Freeman, Daniel L. Pratt, Lawrence K. Smith, W. E. Crosby, G. W. Cain, all of 71 Columbia St., Seattle, Wash.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

LAWRENCE K. SMITH, Business Manager.

Sworn to and subscribed before me this 8th day of April, 1932.
(Seal) RALPH H. MOULTON.
(My commission expires June, 1932.)

THE HOTEL CONGRESS

The stopping place in Portland for Pulp and Paper Men

Sixth at Main Street
PORTLAND
OREGON

200 Rooms—200 Baths

Convenient Downtown Location.
Reasonable Rates Prevail

LOUIS E. BOGEL, Resident Manager

Wood Pulp Salesman Available

Wishes to make contact with Pacific Coast mill as a direct representative. Operating on the Eastern market, New England, New York, New Jersey and Pennsylvania. Has many contacts with Eastern paper mills, having sold foreign Sulphite and Sulphate pulp for many years. Young executive with best of references to submit.

Box No. 119, Pacific Pulp and Paper Industry, 71 Columbia St., Seattle, Washington.

Prince Rupert Mill Site Chosen

A site at Seal Cove, near Prince Rupert, has been tentatively chosen for the proposed sulphite pulp mill in which F. L. Buckley of Vancouver is interested.

"We are planning to establish a 200-ton Mitscherlich pulp mill," said Mr. Buckley. "It will be the only mill of its kind on the Pacific Coast and, in spite of the general slump, I look forward to a keen market for our product."

Mr. Buckley, who says that he has the backing of several influential capitalists in the Middle West, has not announced a time for a commencement of construction, but he hopes to have work gangs on the job before the end of summer.

A representative of Mr. Buckley's associates will visit Prince Rupert in the near future to make arrangements for a supply of water for the mill.

F. W. Holden Heads B. C. Sales for Pacific Wax

The Pacific Waxed Paper Company with its main plant in Seattle, manufacturing a line of waxed paper items, has appointed F. W. Holden to take charge of sales in the British Columbia territory. Mr. Holden has been identified with nationally known paper lines for the past ten years.

Japan's Pulp Imports February, 1932

Japan imported in the month of February, 1932, chemical pulp from the following countries (amounts stated in pounds): Canada, 8,921,334; U. S. A., 3,342,135; Norway, 7,135,200; Sweden, 4,022,933; Germany, 1,494,133; France, 120,933; British, 2,092,666; Austria, 133,733, and Europe, 1,017,600. Total: 28,280,667.

"Print this on good paper, Aaron.

This story of our travels through the desert is going to be a best seller."

Ancient memo from Moses to Aaron shows that the value of good paper was early recognized, so much so that printing specifications called for the first edition to be printed on paper made with Hamilton Felts.

From the dawn of history the superiority of Hamilton Felts in making good paper and making it economically was recognized by paper mill superintendents.

For you know, Shuler & Benninghofen have been making felts for goodness knows how long. History shows the exact date to be from 1858.

That's a long time, much longer than most men alive can remember.

As a result of that experience, almost 75 years of it, Shuler & Benninghofen know how to make good felts. This "knowing how" shows itself in the choice of wool, the methods of carding, of spinning, of weaving, of fulling, and of finishing. All of these in combination result in more than ordinary life to the felt and more than usual value to a paper.

Try a Hamilton Felt. Wherever a paper felt is used, there's a Hamilton Felt that will do it better.

Shuler & Benninghofen, Hamilton, Ohio

Miami Woolen Mills, *Established 1858*

Hamilton Felts

Jones

A name that has won a world-wide reputation through 75 years devoted to paper-making progress

Announcing the LIEBECK FIBRATOR

For Quicker and More Economical Preparation of Stock

The LIEBECK FIBRATOR offers the simplest and most economical method of reducing baled pulp (including frozen baled pulp), whether sulphite, sulphate, soda or ground wood to slush form.

Four LIEBECK FIBRATORS, in operation in the Scott Paper Company Mill, for more than two years, have proved its money-saving advantages and absolute dependability. For example, in labor costs alone this mill has eliminated 288 man-hours per day over the old method used.

Among its advantages are:

Less floor space than any other type of defibring equipment;

Will handle entire bales, rolls or bundles of pulp, even if frozen, without necessity of chopping, shredding or separation;

Pulp completely defibred — no lumps or bunches of fibres;

Reduced labor cost;

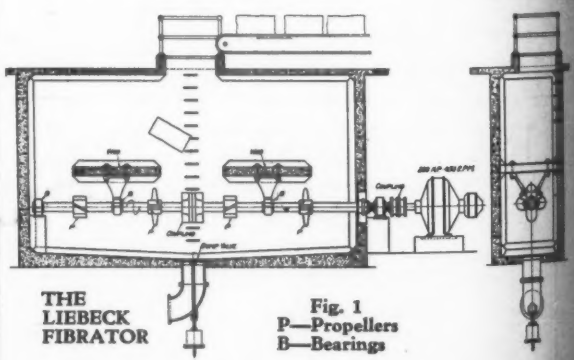
Power required per ton of capacity less than other system;

Maintenance charges almost negligible — no close clearances — no rolls to be refilled;

Small or large capacity units for all kinds of stock.

First cost is low and large part of construction can be done by the mill.

We will be glad to furnish full information and illustrations regarding design, operation and advantages of the LIEBECK FIBRATOR to any executive interested.



THE LIEBECK FIBRATOR

Fig. 1
P—Propellers
B—Bearings

E. D. JONES & SONS COMPANY
PITTSFIELD · MASSACHUSETTS
BUILDERS OF HIGH GRADE MACHINERY FOR PAPER MILLS